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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXIX. No. 6 — Thursday, August 8, 1929

Paper Ranked Fourth Among The Industries

This Is With Respect to the Value Added to Materials By Manufacture Among the Sixteen Major Groups Into Which The Bureau of The Census Divides Manufacturing Industries—At the Close of 1927 There Were 1,942 Paper Machines In Operation With a Capacity of 12,500,000 Tons.

The paper, printing, and allied industries of the United States according to the Commerce Year Book in 1927 ranked, with respect to the value added to materials by manufacture, fourth among the 16 major groups into which the Bureau of the Census divides manufacturing industries. The group has maintained the same relative position since 1923. Its position is relatively higher in the United States than in most, if not all other countries, indicating the advanced standards of living of the people. The total value of products for all the industries of the group combined is not shown in Table 1, by reason of the great duplication between the paper and pulp industries on the one hand, and the industries making paper products or engaged in printing and publishing on the other hand. The value added to materials by manufacture, which involves no duplication, for the group as a whole was $2,808,000,000 in 1927, which was 11 per cent more than in 1925, an increase more marked than that in most other of the census industry groups.

TABLE 1
PAPER AND PRINTING INDUSTRIES

Note.—Data for establishments reporting products valued at less than $5,000 are included in the figures for 1914 and 1919 but not for subsequent years. For individual printing and related industries see Tables 11 and 15.

Industry and year	Establishments	Wage earners (average number)	Primary horsepower	Wages	Cost of materials	Value of products	Value added by manufacture
				In thousands of dollars			
The group as a whole:							
1914	37,209	453,006	2,039,073	296,565	.....	.....	875,547
1919	36,424	510,049	2,346,682	564,722	.....	.....	1,706,630
1921	25,377	467,256	(1)	637,430	.....	.....	1,818,194
1923	25,799	527,019	2,743,529	743,050	.....	.....	2,227,870
1925	26,553	536,766	3,060,794	805,516	.....	.....	2,529,450
1927	28,405	553,040	3,383,222	858,337	.....	.....	2,808,457
Paper and wood pulp:							
1914	718	88,457	1,611,954	53,246	213,181	332,147	118,966
1919	729	113,759	1,849,699	135,691	467,483	788,059	320,577
1921	738	105,294	(1)	127,029	445,992	667,436	221,443
1923	746	120,677	2,178,623	151,477	573,727	907,347	333,620
1925	763	123,842	2,427,010	160,146	605,860	971,882	366,022
1927	929	123,360	2,642,806	162,002	724,111	1,138,090	413,979
Manufactures of paper not made in paper mills:							
1914	1,759	79,368	85,670	36,176	102,278	190,569	88,291
1919	1,967	94,759	117,815	77,408	253,742	463,914	210,172
1921	1,880	80,278	(1)	76,518	224,416	414,895	190,480
1923	1,958	99,278	135,910	99,765	306,210	558,882	252,672
1925	1,980	98,903	148,510	104,546	315,798	588,597	272,799
1927	2,060	102,146	171,989	111,569	360,821	661,690	300,869
Printing and publishing and related industries:							
1914	34,732	285,181	341,449	207,144	265,809	934,099	668,291
1919	33,728	301,531	379,168	351,623	586,977	1,762,859	1,175,882
1921	22,759	281,684	(1)	433,883	661,963	2,068,233	1,406,271
1923	23,095	307,064	428,996	491,808	664,481	2,306,059	1,641,579
1925	23,810	314,021	485,274	540,824	692,576	2,583,205	1,890,629
1927	25,416	327,534	568,427	584,766	752,469	2,846,078	2,093,609

[1] Not called for in schedule for 1921.

TABLE 1—PAPER AND PRINTING INDUSTRIES—Continued

Industry and year	Establishments	Wage earners (average number)	Primary horsepower	Wages	Cost of materials	Value of products	Value added by manufacture
				In thousands of dollars			
Individual Industries							
Paper, 1927 [2]	710	98,566	2,642,806[3]	130,475	572,786	919,891	347,106
Wood pulp, 1927 [2]	219	24,794	(3)	31,527	151,325	218,198	66,873
Bags, paper, exclusive of those made in paper mills:							
1925	66	5,585	6,414	5,524	29,957	45,978	16,021
1927	88	6,463	9,336	6,394	40,735	57,490	16,755
Boxes, paper and other, not elsewhere classified:							
1925	1,229	57,148	76,185	57,172	151,712	281,944	130,232
1927	1,219	56,398	81,300	57,701	168,464	306,555	138,091
Card cutting and designing:							
1925	49	1,086	1,355	1,084	2,436	6,201	3,765
1927	60	2,024	3,915	2,707	7,544	16,871	9,327
Cardboard, not made in paper mills:							
1925	13	978	1,795	1,188	3,475	7,288	3,814
1927	9	658	1,779	849	2,868	5,581	2,713
Envelopes:							
1925	135	9,052	10,288	9,987	27,423	51,189	23,766
1927	153	9,745	11,391	10,755	28,973	56,006	27,033
Labels and tags:							
1925	113	5,356	4,808	6,730	13,096	28,045	14,950
1927	121	6,141	6,869	8,000	16,259	34,398	18,138
Paper patterns:							
1925	16	1,243	813	1,595	2,001	13,665	11,664
1927	17	1,069	1,101	1,418	2,569	13,782	11,213
Paper goods, not elsewhere classified:							
1925	310	13,386	35,324	15,403	70,700	124,217	53,518
1927	340	14,837	42,955	17,765	78,797	140,948	62,151
Wall paper:							
1925	49	5,069	11,528	5,863	14,999	30,069	15,070
1927	53	4,811	13,343	5,981	14,612	30,059	15,447

[2] Separate statistics not available prior to 1927.
[3] Data for paper and wood pulp mills not reported separately.
Source: Bureau of the Census.

Of the three subgroups distinguished much the largest is that of printing and publishing and related industries. All three of the subgroups show decidedly larger totals for horsepower, wages paid, and value added by manufacture in 1927 than two years before. Table 1 shows also data for the major individual industries of the group, other than those engaged in printing and publishing and related activities which appear in Table 11 and 15.

Pulp, Paper and Paper Manufactures

The total paper production in 1927, the latest year for which census figures are available, was 10,002,000 short tons; it is estimated that the production of 1928 was about 2½ per cent larger. The output in 1927 was about 12 per cent greater than in 1925, respect to the value added to materials by manufacture, fourth

(Continued on page 44)

Paper Demand Below Normal In Philadelphia

Distributors and Consumers Delay Purchasing to Any Extent for Autumn Requirements—Bulk of Business Transacted In Local Paper Market of Late, Consists of Small Orders for Immediate Consumption—Price Situation Favorable Despite Competition.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 5, 1929.—Quite contrary to the normal trend of the paper market at this season, the local industry is experiencing a lack of interest on the part of distributors and consumers. This attitude of cautiousness indicates the hesitancy of the consumer in the estimation of future business and while paper dealers are obliged to await a more encouraging outlook, much patience is required to put across orders that because of their smallness are not as profitable as they might be were heavier shipments for Fall needs involved.

While distributors are confronted with this small lot business, the manufacturers are meeting with similar experiences. Mills have been urging dealers to place their autumn business at this time to enable the maintenance of summer production and to avoid the delays which may be occasioned should there be a sudden rush of buying later in the season. Though there is a slightly better demand for paper, it is not up to normal requirements of the season. Producers of wrapping papers and specialties report better demand and operations at from 70 to 80 per cent of capacity, but the general standard lines of fine grades and book papers of the unfinished grades are more active, with a schedule of from 80 to 90 per cent of capacity.

Despite the retarded interest in paper buying at this time the price situation is pleasing to all concerned. Competition is keen, but it lacks that unsavory feature of price cutting which demoralizes the market. It has become a fixed fact in the minds of the dealers that price cutting is harmful and that no matter how attractive offers may be made they do not bring results when the consumer is not looking forward with great concern to the future. All grades of paper have been holding steady. Krafts, tissues, sheathing, gummed tapes, and other staples are firm.

While frequent inquiries are being made on the prices of paper stocks, mills are not eager buyers in volume. A few of the better grades are in demand, such as book papers, writing and ledgers, and these hold steady owing to lack of stocks on hand in the warehouses of the wholesalers. Cheaper grades are at rock bottom but move slowly as the board mills buy direct from their own conducted storage houses in order to enable the production of chip and news board at the present low prices.

Charles Matthias Tours Box Mills

Conditions among the paper box manufacturers of the country show signs of improvement. Charles Matthias, who represents his firm, the Matthias and Freeman Company, 143 North 5th street, one of the largest of paper box supply distributors and manufacturers in the East, just returned from a tour of the paper box trade throughout the New England territory, Pennsylvania and Southern states, finds that there is a growing demand for all grades of box makers papers as these sections of the nation are experiencing an upward turn in business. The Pennsylvania producers of boxes are fairly active with advance Fall demands and for holiday container in fancy boxes. In the South, where labor troubles have retarded many industries in the textile and allied trades, he found that the box makers were not affected by the disturbances as the spinning mills were chiefly involved in the labor disputes, while the hosiery and knit goods manufacturers were free from complications. This freedom from labor worries enables the box manufacturer to keep up a steady season. There has been a usual summer market for supplies among the box converters of the South. In New England where the box trade was considerably affected by the slow business of the early year he found that there was a slightly better outlook.

Analomink Paper Co. Surveys Trade

With a view to developing a broader market for its assortment of specialties and to attain a greater service for the local trade the Analomink Paper Company, of North Water Gap, near Stroudsburg, Pa., made a survey of the Quaker City dealers with regard to their needs along this line. Frank Preble, who has just been assigned to cover the Philadelphia trade, made the rounds of the field, taking up with the individual dealers the problem of specialties which the Analomink company might be able to supply. This applied to specialties that normally are not made by the larger manufacturers and which require equipment such as the North Water Gap already has installed. In addition to looking over the territorial needs of the individual dealers, the newly appointed representative brought to their attention the general lines of specialties which the company is now producing for Fall stocking.

Westinghouse Employees Hold Outing

More than 3,000 employees of the Westinghouse Electric and Manufacturing Company, Philadelphia branch, joined in the outing held by the company here at River View Beach last Saturday. The party took the boat at the Chestnut street wharf and after a sail down the bay they disembarked at River View Beach on the Delaware, where a program of sports, picnic dinner and dancing filled in the time. Manager George Cooper, who looks after the paper mills in this section and throughout the South, with offices in the Quaker City, was among those winning a prize in the afternoon's sporting events sponsored by B. J. Williams, manager of the Employees' Service Department.

Wholesale Waste Merchants to Picnic

Final plans for the outing of the Wholesale Waste Merchants Association of Philadelphia have been made and the committee is now notifying the dealers of the perfection of arrangements for the picnic to be held at Kuglers Mohican Club at Morris on the Delaware River. Those who have perfected the arrangements are William J. McGarity, Jr., of the Penn Paper and Stock Company, William L. Simmons, Jr., of John Simmons' Sons, and George French of Castle & Overton's Philadelphia branch, with offices in the Drexel Building. There will be an automobile trip to the Club and then a picnic luncheon served at noon, while the big feast will be the evening dinner. Throughout the day there will be a special program of varied diversions for outdoor entertainment, to include a baseball game between the rag merchants and the paper stock merchants, the teams to be lined up from members on the grounds. The baseball game will be supplemented by swimming, quoit pitching, and novelty games and sports, with plenty of fun provoking stunts to round out the enjoyment of the members of the various branches of the waste trade, including the paper stock, rag, waste, metal and rubber divisions of the industry

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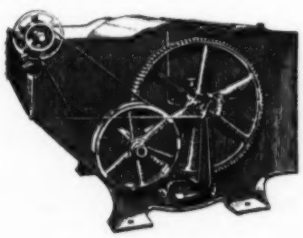
David Kuhe To Manage York Haven Paper Co.

YORK HAVEN, August 5, 1929.—G. C. Emigh after long years of good, faithful service with the York Haven Paper Company, retired from the active management of this Division as of July 31.

David Kuhe, assistant manager of the York Haven Paper Company, was appointed manager, to take full charge of this Division as of August 1, 1929.

THE NEW BIRD SYSTEM OF WHITE WATER TREATMENT ADDS TO PROFITS

It will pay you to investigate this simple, inexpensive, efficient method of fibre recovery. Write us for complete information. . . . .



THE BIRD SAVE-ALL

BIRD MACHINE COMPANY
South Walpole
Massachusetts

BIRD MACHINERY

3242

Boston Paper Market Exhibits Little Change

Both Fine and Coarse Paper Distributors Report Good Amount of Business Transacted Considering Season of Year—Paper Board Industry Continues Unsatisfactory Although Hope Springs Eternal—Many Paper Mills Suspend Operations for Repairs, etc.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 5, 1929.—As the summer weeks go by very little change develops in the wholesale paper situation here. Generally speaking there has been a satisfactory volume of orders, considering the season of the year. Many paper mills have practically suspended operation for two weeks to make annual repairs according to custom. Low water, which is extreme this year, also renders a shutdown advisable. Manufacturers have retained a skeleton crew, however, in order to be in a position to handle emergency orders. It is understood that manufacturers as a whole are rather well satisfied with business during the last month, and it is reported that they have had the best July for years. Jobbers of both fine and coarse paper have had a good business, one handling coarse paper saying that he has "no complaint at all." New Hampshire mills manufacturing tissue have not been especially busy, but a reaction is expected between now and September 1.

There is a little more optimism in the box board industry. The volume of orders is fair and in some cases, at least, a little larger. The important change looked for, however, has not taken place. Values are still at the same levels. "Hope springs eternal," nevertheless, and it is felt inevitable that prices will advance. It is stated that it will be very difficult for the mills to continue operating on the present basis.

Demand for old papers and rags is generally rather dull, but not abnormal for the season. With manufacturers taking vacations while mills are virtually shut down, orders for paper stock are largely hand-to-mouth, and for immediate requirements only. Most quotations are unchanged. Foreign No. 1 books and pamphlets are ruling at about 1.55 on dock Boston. Manila rope is on the decline, and 4.75 is named for foreign. A quantity has sold at this figure. Domestic manila rope is quotable at 5.00. There is a fair demand for mixed strings at the market price of 1.25. Foreign roofing rags are quotable at 1.55 for forward delivery.

News of the Trade

"My Trip to Berlin" is the title of a souvenir book printed on Aurelian paper, furnished by the Worthy Paper Company Association, Mittineague, Mass., through their distributors, Arthur E. Ham & Sons. The book was presented to each member of the Advertising Club of Boston who sailed from this city July 28, aboard the M. S. *St. Louis*, bound for the twenty-fifth annual convention of the International Advertising Association at Berlin, Germany, Aug. 12-15, inclusive. The souvenir, bound in flexible leather, contains an expression of thanks from the committee in charge of the trip, a letter from President Hoover; Governor Allen, of Massachusetts; C. C. Younggreen, president of the International Advertising Association; names of the committee and members of the party, and their itinerary.

Arthur E. Ham & Sons are distributing a new line, Gracian, made by the Worthy Paper Company Association. This paper is for books, brochures, folders, announcements and greetings. Worthy lines of paper are regarded as being among those which possess "charm, individuality, distinction and adaptability." They are "responsive to the delicate lines of the engraver in steel, copper, zinc and wood—the light and shades of half-tones—the subtleties of color plates."

What is regarded as a considerable step forward for a paper concern is a communication sent to printers by the Carter, Rice & Co. Corp. in regard to the Massachusetts Bay Tercentenary in New England, to be held in 1930. The first outside page contains the question, "Printers of New England Are You Getting Ready for the Massachusetts Bay Tercentenary?" The communication states that the Tercentenary "will be celebrated by a series of events more varied and widespread than any previous celebration" and "is of more direct business interest to printers than to any other group." After noting the vast amount of printing which will be required for celebrations, official publications by cities and towns, historical societies, industrial concerns, banks, etc., the folder calls attention to the fact that it will all require a diversity of papers, from the ordinary, inexpensive grades to the de luxe and more costly. The folder also states that in the Carter, Rice warehouse is carried a large and varied stock of flat papers and a complete announcement line in a wide selection. A list of the 59 cities and towns in which preparations for the Tercentenary are under way is printed on the last page.

McLaurin Jones, Brookfield, Mass., is putting out new sample books of gummed papers. John Carter & Co., Inc., is distributing the Jones line of this company and Storrs & Bement Company the Ideal line.

James L. Ham, of Arthur E. Ham & Sons, with two guests aboard his speed boat, *The Lapwing*, rescued two women and a man from the waters of Duxbury Bay recently after their boat had capsized.

Edward Bement, one of the original partners of Storrs & Bement Company, and in business in this city from 1882 to 1892, recently called at the office of this firm. Mr. Bement is 84 years old. His home is in Hartford, Conn.

William N. Stetson, Jr., president of Storrs & Bement Company, is passing his vacation at Ogunquit, Me.

Ex-Governor R. H. Spaulding, of New Hampshire, president of the Spaulding Fibre Company, North Rochester, N. H., Townsend Harbor, Mass., and Tonawanda, N. Y., has gone on a trip to California. His brother, Ex-Governor H. N. Spaulding, was recently mentioned for a diplomatic post.

K. L. Moses is in charge of the Boston office of the Groveton (N. H.) Paper Company, at 80 Federal street. This company is offering a number of new lines.

E. G. Bullis, formerly of the Oswego Falls Corporation, of Fulton and Skaneateles, N. Y., who came to the Groveton Paper Company as sales manager, is making his headquarters at the main office in Groveton, N. H.

The office of George H. Sweetnam, Inc., has been removed from 641 Atlantic avenue, this city, to a new plant at 286 Portland street, Cambridge, Mass. This concern is a representative of the Hartford City Paper Company, Hartford City, Ind.

The Champion Coated Paper Company, of Hamilton, Ohio, whose Boston office is at 201 Devonshire street, has greatly improved the shade of the White Coated Cover and White Satin Enameled Book. Samples of these lines, together with an explanatory note, have been distributed throughout New England.

The Champion Fibre Company, of the same Boston address, is putting out a Buff posting ledger in various weights and has made an attractive sample book of Canton board, produced at the Canton, N. C., mill.

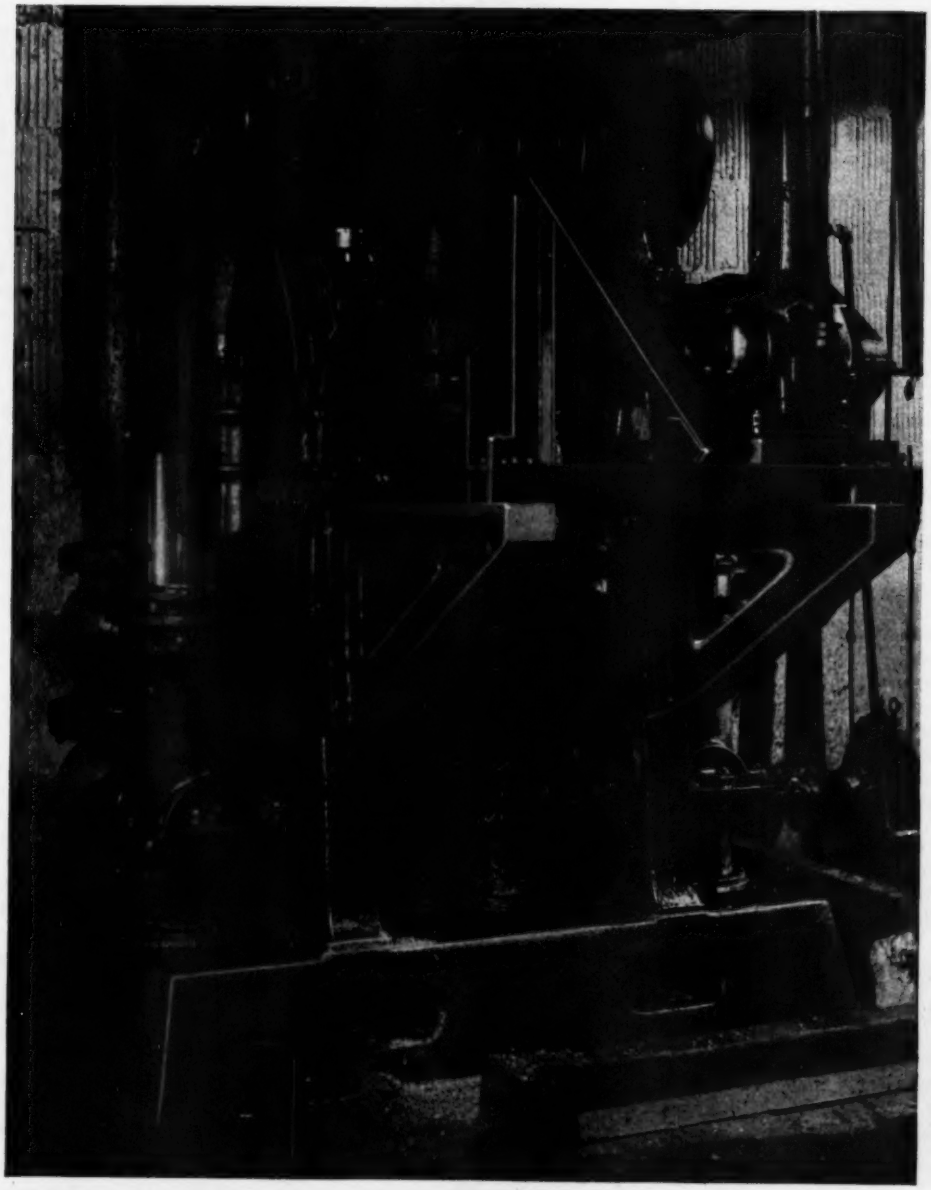
The Albemarle Paper Mfg. Company, Richmond, Va., has reopened a Boston office at 80 Federal street. A former office of the company in this city was closed six months ago. Blair Stringfellow, Jr., is the Boston representative.

John F. Wilson, advertising manager for Carter, Rice & Co.

(Continued on page 32)

Triplex Stuff Pumps which daily handle up to 165 tons dry weight of stock at 5% consistency, Duplex Stuff Pumps and Centrifugal Pumps—all built especially for paper mill use. All sizes to meet your requirements, many of which are carried in stock for immediate shipment. Our Bulletin 114 completely describes our line of pumps and gives capacities, dimensions and other useful pumping data.

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.



Chicago Paper Trade in Satisfactory Position

Usual Midsummer Decline Not Quite So Noticeable As In Past Few Years—Despite Some Over-Production, Stocks In Hand Are Not Excessive and Outlook For Next Six Months Is Most Encouraging—News Print Situation Continues to Show Improvement

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 5, 1929.—Conditions in the Chicago paper market indicate that the usual summer decline in business is not quite as noticeable as in the past few years and the outlook for the next six months of the year is reported to be fairly good, even excellent in some lines. While some over production is said to be prevalent in a few lines, in general the shelves are cleaned out in good shape, making possible a systematic advance into fall business.

News print continues to go along at a normal pace, the price controversy seeming to have gone by the boards almost entirely. Fine papers are weathering the summer slackening in good shape with prices steady and stocks balanced. Wrapping papers have slowed up, according to reports, but not seriously. Ground woods, a short time ago considered in the "over-production" category, seem to have partially eliminated this trouble and prices remain steady and the market firm. The board market is as good as can be expected although it is reported that the price situation must be ironed out before board manufacturers and distributors can cash in on the good demand.

Chicago Paper Association Outing

Forty-three members of the Chicago Paper Association and their guests took a day off on July 26 to explore the many hazards of the sporty Woodridge Country Club out by Lisle, Illinois. It was the annual outing of the association and the unusual percentage of 33 of the 43 visitors shot the golf course, competing for a long list of prizes. A noon luncheon and a dinner in the evening were the big "feed" events of the outing, prizes having been given out on the lawn around the club in the evening.

Low net went to Earl Beier of Beier & Co.; one of the vice-presidents of the association. Bill Rauth came in with second low net; Mortie Inlander copped the prize for third low net, while N. A. Stone found a prize offered for fourth low net. No dearth of prizes at these Chicago Paper Association "doings"! In the low gross money, Ernie Allen finished first, with L. O'Leary a close second. Alvin Neuberg walked off with the prize for third low gross score. Guests who won prizes included P. A. Lee, who won first low net in that class, and Ed. Keeler, who won first low gross.

Although Edgar A. Hall, Jr., long an enthusiastic member and executive of the association, was not present, he did, nevertheless, make his absence even more noticeable by offering two unusual prizes to the trophy collection. Ed donated a prize for the highest score which was won by Ed Vogeli, and a prize to the unlucky one who lost the most money at poker. Name given on request, according to Earl Beier who supplied this information.

Paper Salesmen's Golf Tournament

Tom Donahue, of the Warren Manufacturing Company, chairman of the golf committee of the Salesmen's Association of the Paper Industry, announces that the next of the regular monthly tournaments is to be held at the Westmoreland Country Club on August 21. The last event, held July 18 at the Elmgate Country Club saw Bob Butterworth, of the Champion Coated Paper Company, crashing in for the low net prize. Other prize winners included Warren Moore, of the Brown Company, who won the blind bogey prize, Charles Forrester, Container Corporation of America, low putts on the first nine, Les Ferris, of the Patten Paper Company, winning low putts on the second nine holes. A good crowd was present.

While talking about golf the Salesmen's Association is announcing that the Rev. George Craig Stewart, chaplain of the national organization, is now a member of the "Hole-in-One" club. The popular chaplain, who lives in Evanston, shot his ace the latter part of July.

The program for the Salesmen's Association, held in conjunction with the meeting of the National Paper Trade Association in the fall, is being whipped into shape. Jim Coy is assisting in getting the main speaker lined up.

Paper Board Men to Meet

H. S. Adler, of the Paperboard Industries Association, announces that the next meeting of the Association is to be held in Chicago, September 18 and 19. The hotel to be favored with the two day meeting has not yet been definitely decided upon. The July meeting of the Paperboard Industries Association, held at the Westchester-Biltmore Country Club in the East, was featured by continued interest manifested in the Trade Practice Commission. The efforts of this group of the paper world to put over trade practice principles are not only increasing the membership of the association but are pervading the business world in such a way that other industrial organizations are showing a decided interest in the trade practice work. The fall meeting of the paper board group, while it will undoubtedly follow the usual plans of separate meetings for the Paper board, Folding Box, and Container Groups, will also give plenty of time to the Trade Practce business at hand.

News of the Trade

Bermingham & Prosser, Chicago paper house, who early this spring greatly increased their floor space and facilities by moving to the four story building formerly occupied by Benjamin Electric at 125 South Sangamon street, announced on August 2 the purchase of a vacant corner of Adams and South Sangamon streets, adjoining the present building. The purchase price was listed publicly at $47,500. The property provides for expansion and undoubtedly will be improved with an annex to the present plant of the Bermingham & Prosser Company. The annex will probably be four stories high and perhaps even higher, owing to the cost of the ground space.

The Swigart Paper Company, 717 South Wells street, has issued a piece of direct mail on "Linweave," the copy using the vacation theme, effectively set off by black and color illustration. The Linweave papers come in many colors and sizes harmonizing with the type of merchandise to be advertised. Envelopes to match are offered.

Deauville greeting paper continues to be a big seller with Bradner, Smith & Co., 33 South Des Plaines, Chicago. Deauville comes in fifteen colors including white, ivory, cream, gray, gray granite, lavender, light blue, dark blue, blue granite, russet, melon, tangerine, nile green, dark green and flame. Deauville is a vellum finish paper coming in 22x34 sheet size. It comes in two weights, heavy for covers and cards and light for folders and booklets.

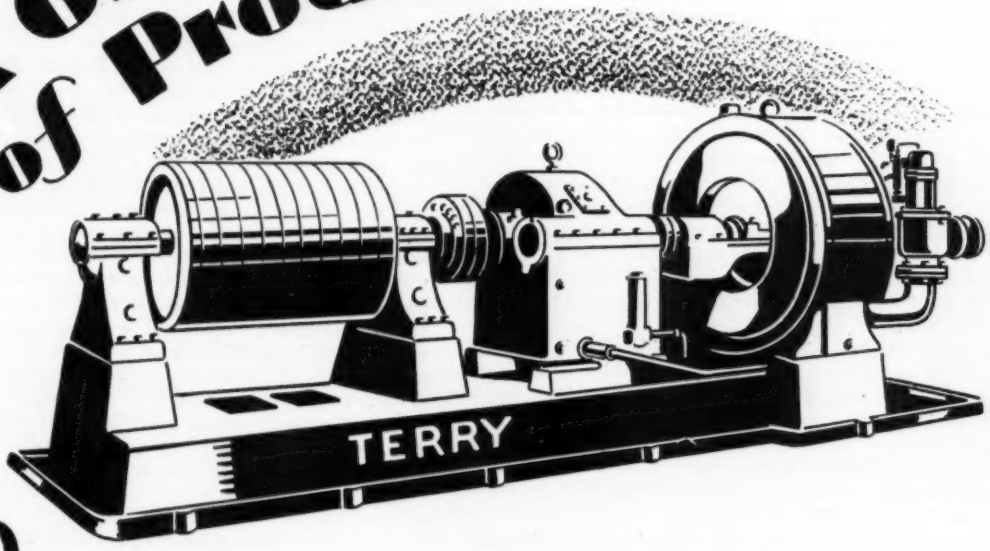
Legion Bond, a rag content paper suitable for general use, is being extensively advertised by the Whiting Paper Company with offices at 318 West Washington street, Chicago. It is stocked at the Chicago warehouse in white and five colors, blue, buff, canary, golden rod and pink, and in a variety of sizes and weights.

Sorg Paper Co. To Expand Beater Room

DAYTON, Ohio, August 5, 1929.—The Sorg Paper Company, Middletown, will erect a $10,000 addition to the present beater room, it was learned when plans were submitted to the city building inspector in that city.

The building is to be erected on the east side of West Alley, between Manchester and Central avenue, just across the alley from the main plant. The building probably will be used for bleaching purposes.

A Greater Variety of Products!



With the TERRY Paper Machine Drive

The Terry drive can be furnished to operate over any speed range up to 1 to 10. This permits the production of a greater variety of products. High paper speeds or low paper speeds can be secured without any change in the driving equipment other than a simple governor adjustment. The drive can be run at whatever speed is most suitable for the stock.

Write for a copy of the new bulletin describing the many advantages of the Terry Drive. Ask for Bulletin S-899.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CONN.
OFFICES IN PRINCIPAL CITIES

Steam Turbines · Gears · Shaft Couplings

T-1036

News Print Situation Analyzed by L. R. Wilson

Abitibi Pulp & Paper Co. Official Points Out That News Print Mills Are Operating Close to Capacity In Order to Supply Demands of the Market—Consideration of Mill Extention Avoided—Expresses Opinion That Prevailing Price Is Too Low

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., August 5, 1929.—In an interview in Toronto a few days ago, L. R. Wilson, vice-president and managing director of the Abitibi Power and Paper Company, Ltd., head office Iroquois Falls, Ont., and with offices at Toronto and Montreal, pointed out in regard to the general news print situation that the news print mills were only supplying the demands of the market through working close to capacity. The question of making an adequate supply when the demand shall have reached the higher figure that manifestly is impending will soon be a vital one. While he did not say so, in so many words, it was evident that he had the question of mill extension, which has been quiescent of late, in his mind. There has been a definite tendency to avoid consideration of this matter, but there may be more than one project mapped out in the minds of financial parties, if not in the offices of architects. He did, however, express the opinion that news print prices now are too low.

Paper makers are not able to make a wide enough margin of profit, though stocks have manifested a disposition to creep upward of late. After the depression last winter, and the surplus of stocks on hand, there were many new long-term contracts made at too low prices, and those contracts have to be fulfilled throughout their terms of life, creating a static condition in the news print market which cannot be conducive of very much expansion, and is not very attractive to investors.

The cheerful antithesis of this rather drab situation in the paper-making realm is to be found in the inordinately optimistic situation in the newspaper publishing field. Newspapers of all classes are prosperous; they are making money, and it is the advertising increase which is responsible for their making money. Circulations of newspapers have not boomed to any great extent. The newspapers have learned to make their advertising pay more money by increased lineage as well as by more skilled selling policies and enhanced rates. Advertising persists in requiring more and more space, and as it grows in volume newspapers consume more and more news print, and their demands on the mills mount and mount.

Mersey Paper Mill Near Completion

Word from Halifax, N. S., indicates that rapid progress is being made on the construction of the large pulp and paper mill of the Mersey Paper Company, which is being erected at Liverpool, N. S. It is anticipated that the mill will be ready to go into production in December and will have an initial capacity of 300 tons of news print a day. The financing of the company, which will be Nova Scotia's second largest industry, is being under taken by the Royal Securities, Ltd. The agreement entered into by the Government of Nova Scotia and the finance company involves a capital expenditure of over $12,000,000 in the erection of the mill and $3,000,000 on the part of the Government in the development of certain hydro power which is to be provided the pulp mill on a fixed cost basis. The wood supply for the industry is to come from two sources—from the company's own land which is very extensive, and from certain Crown lands from which pulpwood is to be sold by the Government to the company on a stumpage basis, the rates having been established on a sliding scale for ten-year periods, beginning with $1 a cord for the first ten years, $1.50 a cord for the second ten years, and $2 a cord in the third period, the rate thereafter to be determined by the Governor in Council. An important stipulation of the agreement is the undertaking by the corporation that in case of all pulpwood, whether from Crown lands or lands owned in fee by the corporation, all will be manufactured into paper within the Province of Nova Scotia and that no unmanufactured pulpwood will be exported. The Government has agreed to make available to the company 1,000,000 cords of wood over a period of 30 years and until the year 1935 the company's operations on Crown lands will be confined to the Island of Cape Breton and Guysboro County.

Construction Going Rapidly Ahead

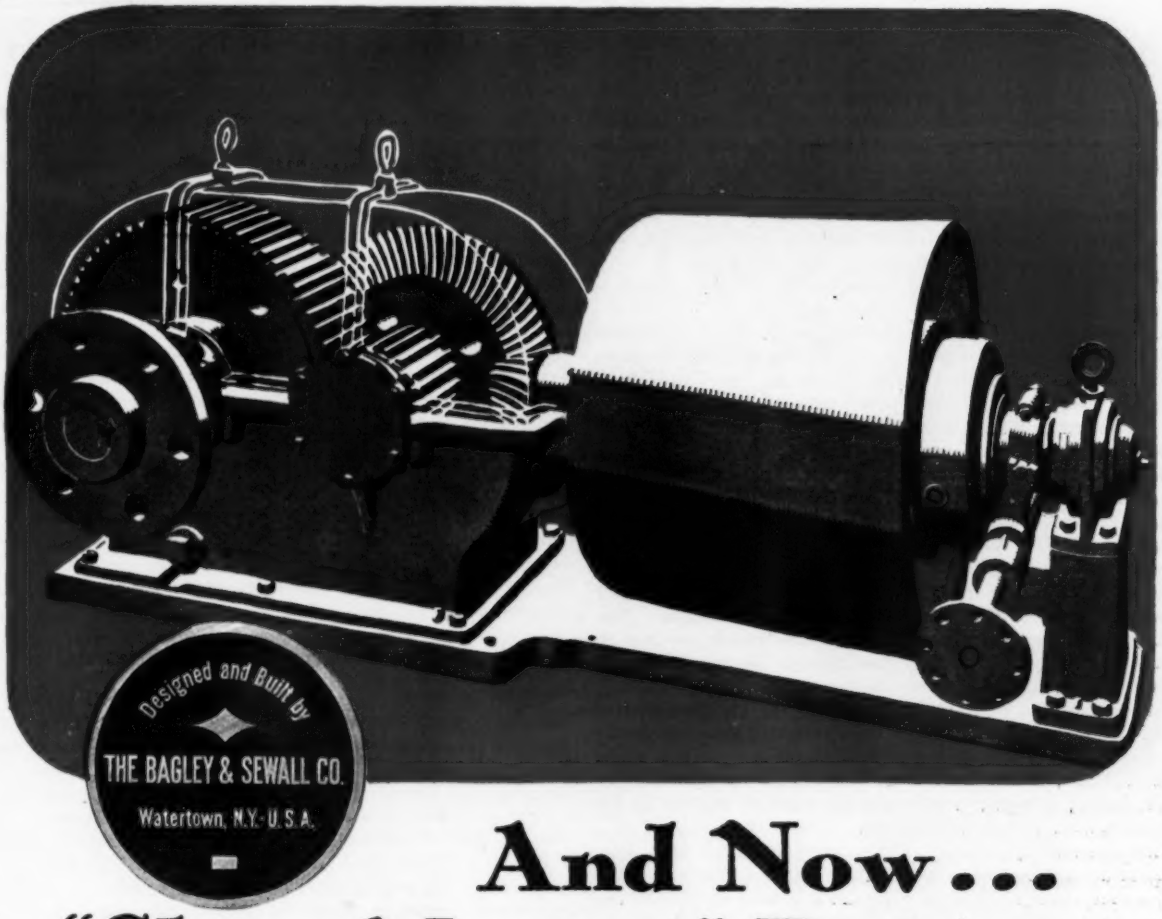
Construction work on the mill has advanced rapidly during recent months. The large group of buildings are being constructed of the finest Nova Scotia red brick, practically all of which work has been completed. The large paper storage dock has been finished and steel workers have commenced to erect the supporting steel for the paper storage building. The buildings which comprise the offices, stores, machine shop, grinder room, sulphite mill and blow pit rooms all have their building walls fully erected. The walls of the boiler house and turbine room are well on toward completion. To the north of the water tower are rapidly rising three large concrete towers which will be acid towers used in conjunction with the making of digester acid necessary for cooking sulphite pulp. Within the mill some of the equipment has already been placed. In the grinder room where the pulp is to be made a vast number of men are engaged in placing the twelve big continuous grinders and their large motors. In the mixing room employees are engaged in erecting screens, filters, deckers and other equipment. In the immediate future the machine builders will arrive to erect the paper machines.

Heavy Losses in Forest Fires

Canada from Ontario westward to the Pacific Coast has been a checker board of forest fires during the past week and, owing to the drought, extensive fires in many districts are still raging, destroying pulpwood and other timber. Fires have been burning in every direction from Fort William whence many of the paper mills get their supplies of pulpwood, the burning area extending from Shebandowan Lake to Nipigon. There is hardly a section where the bush is not ablaze at least in one place. One of the heaviest losers so far is E. A. Bell, timber operator of Fort William, whose limits on the Jarvis River, south of Fort William, have been swept over by a fire that was completely out of control during the week. Already he had lost cut pulpwood to the value of $40,000.

Toronto Pulp Firm Loses Heavily

Thompson & Heyland Lumber Company, Toronto, who are extensive dealers and operators in pulpwood, had 3,500 cords burned in a forest fire some thirty miles south of Fort William, near Jarvis Bay. The loss is estimated at about $25,000. The company reports that the pulp peeling season is now over and that they contracted with settlers, jobbers and others for 125,000 cords of pulp peeled wood, 75,000 of which is poplar, the balance being spruce and balsam. The poplar will be shipped to paper plants at Cornwall, Ont., Tonawanda, N. Y., and Pennsylvania. At present Thompson & Heyland Lumber Company are shipping cargoes from Bruce Mines, Thessalon, Fort William, Cockburn Island and Manitoulin Island. The company have enlarged their area of wood operation which now extends from Montreal to west of Fort William and from Quebec Province to west of Hearst. Great difficulty has been experienced in getting pulpwood down the streams this season owing to the low water and absence of rain. The company have 1,000 cords on the dry bed of a creek near the Abitibi River and another 1,000 cords stranded at Jarvis Bay. James Thompson, president of the company, states that the pulpwood situation is normal and prices are ruling about the same as two years ago. The amount of wood cut and peeled in various



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"Mile-a-minute" paper machines have no monopoly on the advantages and convenience of the Bagley & Sewall Spiral Bevel Gear Drives. Slower machines are served fully as satisfactorily by the new Bagley & Sewall Compound Drive. Every feature of the speed drive—amazing compactness, all metal cut gears, roller bearings, full enclosed oil bath with splash feed that maintains a constant film of oil at all contacts, practically total freedom from vibration—and, in addition, a *speed reduction device that can be furnished in any desired gear ratio.* Equipped with smooth functioning multiple disc or magnetic clutches that are the ultimate in starting and running control.

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The Bagley & Sewall Co.

Watertown, N.Y.

parts of Northern Ontario by settlers, contractors and others is ahead of last year.

Notes and Jottings of the Trade

Information from New Bruswick is to the effect that construction of a new sulphite pulp mill for the manufacture of rayon is expected to commence on the Miramichie River this fall. The International Paper Company and Fraser Companies, Ltd., are said to be interested in the development which takes over the Crown lands formerly leased by the J. B. Snowball Company, Ltd., and the saw mill property at Chatham.

F. R. Thorn, of Price Bros. Company, Ltd., Quebec, was a business visitor in Toronto a few days ago.

A report states that a company has been formed in Regina, Sask., to make use of straw for the manufacture of boards to replace lumber. The machine, for which the rights have been acquired, compresses the straw under pressure of 100 pounds to the square inch and turns out boards 14 feet in length by five feet in width and two inches thick.

George W. Pauline, assistant managing director of the Alliance Paper Mills, Ltd., Toronto, has returned from a holiday in Windermere, Muskoka.

At a recent meeting in Toronto of the board section of the Canadian Pulp and Paper Association it was decided that the mills would close down a certain number of days each summer month until the market has caught up with production. The exact number of days to suspend during any month was left to be determined by market conditions, though the maximum was understood to be not over twenty days in any one month.

David F. Robertson, general manager of the Canadian Paperboard Co., Ltd., is in the Canadian West making a thorough survey of conditions affecting the paper board business.

A. T. Brown, general manager of E. Pullam, Ltd., rag and paper stock dealers, Toronto, is spending his summer vacation at his summer cottage in Bowmanville, Ont.

That Canadian producers and exporters of paper and other commodities are not living up to their opportunities when they fail to show their goods in Great Britain at exhibitions such as the British Industries Fair, was the statement of C. J. Kay, of the Columbia Paper Company, Ltd., on his return to Vancouver after a business trip to England. Mr. Kay stated that in London they were building one of the largest news print mills in the world and there were no signs that the nation was lagging behind in the paper industry.

Paper Expert Testifies in Will Case

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 30, 1929.—William A. Holgate, assistant foreman of the finishing department of the Parsons Paper Company, testified as an expert last week before the Norfolk Probate Court at Brookline in a will contest case at which the disposal of $100,000 is at stake. It is claimed that the will was dated July 25, 1925, and Mr. Holgate, reading from the records, testified that the certain brand of paper on which the will was supposed to have been drawn did not leave the local mill until April 18, 1928, and went to Hobbs & Warren, stationers at Boston.

On cross examination Mr. Holgate testified that he told one grade from another by the "feel" with his fingers. The will is being contested by Alfred J. Perkins, of Atlantic City, N. J., a cousin of the deceased, Mrs. Laura A. Littlefield. The case was left unfinished and will be taken up again in September.

Helsingfors Reports Sulphite Prices Improved

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 7, 1929.—The demand for sulphite pulp is good at improved prices, according to a cablegram from Commercial Attache Lyons at Helsingfors. The sulphate pulp and the paper markets continue dull, however, according to the same report.

LITTLE CHANGE IN BOSTON

(*Continued from page 26*)

Corp., accompanied by Mrs. Wilson, has returned from a trip including Vermont, Lake Champlain, Canada and the White Mountains.

William G. Prior, of The Tait & Sons Paper Company, Bridgeport, Conn., called on the trade last week.

The Deerfield Glassine Company, of Monroe Bridge, Mass., whose Boston office is at 176 Federal street, has some big orders, covering delivery for three weeks ahead. One of the orders is for three carloads of the product. Western New York, New England and the South are handled from the Boston office, which is in charge of E. Norman Scott.

George Stockbridge, formerly traveling salesman in the Atlantic seaboard states south of Philadelphia for the American Paper Goods Company, with headquarters in that city, is now handling the Eastern Massachusetts territory, with his office in Worcester, Mass., his home town.

Storrs & Bement Company have purchased two new Diamond T trucks.

The Harris Waste Paper Company, of East Providence, R. I., has been incorporated under laws of Rhode Island, with capitalization of 30 shares of no par value. The incorporators are Harris Ackerman, Annie Ackerman and Louis C. Giusti, all of Providence.

Papermakers Chemical Corp. Expands

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., August 5, 1929.—Growth of the business of the Papermakers Chemical Corporation on South Clinton street has been phenomenal in the past few years and the original plant has been enlarged several times to provide better facilities. The plant is one of many which may be found in close proximity to nearly every heavy paper producing section of this country. The chief product of manufacture in the local establishment is superior rosin size for which there is a great demand in paper mills.

The firm maintains its own pine forest lands which are in Southern Georgia where a domain of 205,000 acres supplies its raw materials which are used in making the famous superior rosin size of the Paper Makers Chemical Corporation. Through a new arrangement the plant is also manufacturing alcolloid automobile radiator cleaner and alcolloid boiler cleaning compound and in conjunction with these products the firm also serves as distributors of a complete line of painters, laundry, dairy and industrial supplies.

Receivers for Luzerne Paper Corp.

[FROM OUR REGULAR CORRESPONDENT]

HADLEY, N. Y., August 5, 1929.—Appointment of William H. Redlien, of Hadley, and George J. Hatt, of Albany, as receivers for the Luzerne Paper Corporation was announced during the past week by Judge Frank Cooper in Federal Court at Utica. The corporation has liabilities of $230,000, including a mortgage of $95,000, and assets of $125,000, including real estate valued at $100,000, according to the voluntary petition in bankruptcy which was filed against the company by Vito Cantasano, F. Glove & Darecca and Cantasano Brothers. Attorney John F. O'Brien acted as representatives of the petitioning creditors in the proceedings.

May Build Pulp Mill on Poplar Island

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., August 2, 1929.—Charles G. Heifner, Seattle, according to current reports, has been granted a three months' option on Poplar Island in the Fraser River, British Columbia, with the ultimate view of building a pulp plant there to cost $600,000. New Westminster has a year's option on the island from the Dominion Government and gave Mr. Heifner the 90 days' option to permit him to make financial arrangements for the proposed enterprise.

Staking Out a Claim

Fifty-two years ago, Jeffrey staked out as its chosen field, the manufacture of mechanical handling equipment.

Working the Claim — For years it was vigorous campaigning to show what could be done with conveyors and elevators.

Today, there is hardly a mill or plant of any consequence anywhere that does not appreciate the advantages of mechanical handling.

Cashing In—Judged by the calibre of its customers, Jeffrey is fortunate today in enjoying the confidence of the leadership in industry. The progressive spirit of development in the Jeffrey organization has caused the pulp and paper industry to look first to Jeffrey for a satisfactory solution of its handling problems. Fifty-two years of vision, initiative, and experience have developed a Jeffrey line of equipment to meet any handling problem in the pulp and paper industry.

A few of the many Jeffrey units available for your use are illustrated here; but we would like to send you our latest literature on the proper equipment for handling any bulk or package material inside or outside of your mill. Just check and clip the corner of this page.

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Bucket Elevator

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Chain Conveyor

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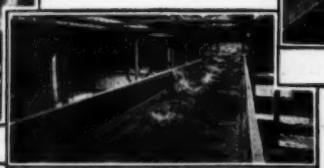
Scraper Conveyor

LIME & SULPHUR
Scraper & V-Bucket Conveyors

PULP LAPS
Belt Conveyor

RAGS
Wood Apron Conveyor

PAPER ROLLS
Tray Elevator



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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Camas, Wash.—The Crown Willamette Paper Company, 248 Battery street, San Francisco, Cal., is beginning work on its expansion and improvement program at mill at Camas, to include the construction of several new buildings for pulp manufacture and finished paper production. Initial development will include a one-story plant unit for bleached sulphate pulp, and for which list of equipment to be installed will soon be arranged. Closely following, work will be placed under way on the installation of a Fourdrinier paper machine to be one of the largest units in operation on the Pacific Coast. The entire program will be carried out over a period of months, and is estimated to cost upward of $3,500,000.

East Rutherford, N. J.—The Flinkote Company, East Rutherford, manufacturer of roofing papers, etc., has taken bids on general contract for construction of new addition to local mill, and is said to be arranging for work at an early date. It will be two-story, reported to cost close to $45,000, with equipment. Headquarters of the company are in the Park Square Building, Boston, Mass.

Mobile, Ala.—The Jacksonville Paper Company, Jacksonville, Fla., has concluded negotiations for the purchase of factory and business of Malcolm Partin Company, 57 North Water street, Mobile, manufacturer of paper bags and other commercial paper goods, and will take over the property at once. The purchasing company will form a subsidiary under the name of the Partin Paper Company, to operate the plant, and plans an expansion and improvement program for considerable increase in present output. W. E. Perry will be manager of the Mobile factory; C. S. McGehee is head of the purchasing company.

Chicago, Ill.—The Shellmar Products Company, 3519-29 West 48th street, manufacturer of glassine paper specialties has filed plans for a new addition to plant, to be one-story, 110x115 feet, for which general contract was recently let to C. Baker, 1558 West 79th street. Superstructure will be placed under way at once. The unit is reported to cost close to $40,000, with equipment. A. Epstein, 2001 West Pershing Road, Chicago, is architect and engineer.

Chillicothe, Ohio—The Mead Pulp and Paper Company, Chillicothe, has plans maturing for the construction of a new addition to its local plant on Tenth street, near Mulberry street, to be used in part for the production of straw pulp, with equipment to provide for a capacity of about 25 tons per day. An extension program for corresponding increase in output will be made in other divisions of the mill, entire expansion estimated to cost more than $400,000, with machinery. The company engineering department is in charge of the work. H. P. Carruth is general manager.

Tumwater, Wash.—The Tumwater Paper Mills Company, recently acquired by the Leadbetter interests, operating the Columbia River Paper Mills, Vancouver, Wash.; the Oregon Pulp and Paper Company, Salem, Ore.; the Vancouver Kraft Company, Ltd., Port Mellon, B. C., and other paper mills, has begun an expansion and betterment program for enlarged output, particularly in connection with production of kraft paper of high test. New equipment will be installed, with work reported to cost in excess of $150,000. The plant will be operated in the future in conjunction with the other properties of the purchasing interests. F. W. Leadbetter heads the organization.

West Springfield, Mass.—The Strathmore Paper Company, Mittineague, Mass., has taken bids for the installation of a new hydroelectric power plant at West Springfield, to be used in connection with paper mill operations in that section. The plant will be one-story, brick, and is reported to cost close to $100,000, including power connections and miscellaneous work. It is proposed to place the project under way at an early date.

Denver, Colo.—The E. Grimes Company, 1333 11th street, paper goods, has completed plans for the construction of a new storage and distributing plant at 2253 Market street, to be two-story and basement, brick type, reported to cost about $35,000, with equipment, for mechanical handling and other service.

Monroe, La.—In connection with its mill expansion program, the Brown Paper Mill Company, Inc., has arranged for immediate financing with the sale of a bond issue of $3,000,000, practically the entire proceeds to be used for new plant units at West Monroe, for the manufacture of kraft paper and kraft paper board. The project will consist of several buildings and the installation of equipment to increase the capacity from 150 to 350 tons per day. The entire program is reported to involve close to $5,000,000. Plans and specifications are being prepared by George F. Hardy, 309 Broadway, New York, consulting engineer; equipment purchases will be made under the direction of the last noted office.

Montclair, N. J.—The City Council, Montclair, has concluded arrangements for the purchase of the former local paper mill of the New Jersey Coated Paper Company, on site bounded by Oak, Forest, Erie and Label streets, consisting of one-story structure aggregating about 100,000 square feet of floor space; it was secured for a reported consideration of $151,000, and will be used by the city for municipal service. Operations were discontinued at the plant some months ago, and recently it has been owned by the United States Printing and Lithographing Company.

Fort Wayne, Ind.—The Fisher Brothers Paper Company, Fort Wayne, has superstructure in progress for a new one-story and basement at Lafayette and Main streets, 70x150 feet, to be used for machine and mechanical service. It will cost about $40,000, with equipment. A. M. Strauss, Cal-Wayne Building, Fort Wayne.

International Falls, Minn.—The Minnesota & Ontario Paper Company, Builders' Exchange Building, Minneapolis, Minn., is said to be making ready for erection of new building at its mills at International Falls. It will be five-story, 140x165 feet, designed for storage and distributing service, reported to cost about $65,000.

New York, N. Y.—The Wilson-Jones Company, Inc., 3300 Franklin Boulevard, Chicago, Ill., manufacturer of loose leaf paper products, etc., has leased a floor in the building at 233 Spring street, New York, totaling about 25,000 square feet of floor space, and will use as a factory branch and distributing plant. Early occupancy is planned.

Oakland, Cal.—The Palmer-Chase Company, 6011 Adeline street, manufacturer of folding paper boxes and other paper goods,

Why Worry?

"You worry too much" said the doctor, "you worry altogether too much, and I can tell you how to stop it."

"In the first place there are a great many things that you can't help. There is absolutely nothing you can do about them. They are there —you know it and you can't help it,—so *don't worry about those things*. Accept the situation and don't worry about it. That will cut out at least half your worries."

"Then there are a great many things that you *can* help, so just go right ahead and help them and *don't worry about them*. That will eliminate the other 50% of your worries,—and there you are without any worries."

Now the paper-maker's road to fame and fortune is indeed a worrisome one. It is no path of roses and there are many obstacles in the way which you can't help. There are times when you surely do need the doctor. There are many things (such as replacing your old beaters with Dilts New Type, for example) that you *can* help, and those things you should go right ahead and do and not worry about them. Just follow the doctor's advice.

Your job is to make your paper mill show profits. You know "your paper is made in your beaters." You know, too, that we build the Dilts New Type Beating Engines, so—why worry?

VICE-PRESIDENT

DILTS MACHINE WORKS. INC.

Fulton, New York

is said to have plans under way for the construction of a new addition to plant, to be one-story, about 100x100 feet, to cost approximately $80,000, with machinery. The expansion will provide for considerable increase in present capacity.

New Companies, Etc.

New York, N. Y.—The Tremont Supply and Paper Company has been incorporated with a capital of 100 shares of stock, no par value, to manufacture and deal in commercial paper goods of various kinds. The company is represented by E. A. Brown, 2 Lafayette street, New York.

Chicago, Ill.—The Austin Paper Company, 13-15 West Austin avenue, has been incorporated with a capital of $10,000, to deal in paper goods. The incorporators are Joseph F. DeWaele, Harry H. Wise and Louis Kessner.

Philadelphia, Pa.—The Columbia Paper Box Manufacturing Company, Howard street and Lehigh avenue, has filed notice of organization to manufacture paper boxes and containers. The company is headed by Michael J. Halloran, 3006 Cedar avenue, and James Searing, Jr., 1532 North Hewson street.

Phoenix, N. Y.—The John H. Hollingsworth Paper Corporation has been incorporated with a capital of 1,000 shares of stock, no par value, to manufacture paper goods. The company will be represented by G. M. Fanning, Fulton, N. Y., one of the principal incorporators.

White & Wyckoff Forty Years Old

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., August 5, 1929.—The White & Wyckoff Manufacturing Company is 40 years old this week. One of the events of the celebration was the presentation to Miss Katherine C. Callahan of a purse of gold commemorating her forty years' association with the company. Miss Callahan, with E. N. White, chairman of the board and treasurer, having been two of the original members when the concern was formed August 1, 1889.

Established in that year in a very small plant on Race street, with only eight employees which included both Mr. White and Miss Callahan, the company today employs in the neighborhood of 800 and 900 men and women, and is rated as the second largest business of its kind in the world, standing well up in the front of Holyoke's leading industries.

The company was originally started as the Smith & White Manufacturing Company, a partnership made up of F. D. Smith and E. N. White. It was established in a small building on Race street, then known as the Postal Card Factory, the building having been previously used for the manufacture of postal cards for the United States Government.

The machinery at that time consisted of four ruling machines, one power trimming knife, a hand cutter, a few trucks and small tools. Quite a decided contrast to the modern, intricate, elaborate machinery now housed in the two large buildings at Riverside, and their new plant at Davenport, Iowa, opened up last year.

J. L. Wyckoff joined the organization in 1891, his attention being devoted chiefly to the sales end of the business, while the accounting end was looked after by Mr. White, the manufacturing department being taken care of by Mr. Smith. Two years later, in 1893, Messrs. White and Wyckoff purchased Mr. Smith's interest and formed the corporation of the White & Wyckoff Manufacturing Company, which has continued uninterruptedly for 40 years, Mr. Wyckoff having held the office of president and Mr. White the office of treasurer from the formation of the company all through the years.

Both men have always been prominent in Holyoke's business and civic life. Besides their interest in the White & Wyckoff Manufacturing Company, they have also been directors of the Steubing-Cowan Company, recently absorbed by the Yale & Towne Manufacturing Company. The Cowan Lift and Elevating Trucks, it might be added, had their inception in the White & Wyckoff plant, being invented and produced to take care of one of the White & Wyckoff manufacturing problems, and were for a time manufactured by the White & Wyckoff Manufacturing Company.

Both Mr. White and Mr. Wyckoff are directors of the Hadley Falls Trust Company. Mr. White is also a trustee of Mt. Holyoke College, and has been actively connected with the Second Congregational Church, being one of the principals in the financing and rebuilding of the new church. Mr. Wyckoff has been nationally known as the president of the Mt. Tom Golf Club, which office he held for twenty years, until he retired in the spring. Wyckoff Park was named in his honor.

The development of the White & Wyckoff Manufacturing Company is one marked by a steady and continual growth, the first factory having been enlarged and again enlarged until it now occupies 170,000 square feet of floor space. The company's buildings were first enlarged in 1891, again in 1898, then again in 1907, 1916 and 1919, and today constitute three modern, fully equipped manufacturing plants, two of the plants being located in Holyoke and one in Davenport, Iowa. All told, the three plants occupy floor space equivalent to seven acres. It is interesting to note that the White & Wyckoff Manufacturing Company actually performs under its own roofs all the operations necessary to produce boxed writing papers, as well as their other products; they make everything but the paper.

The officers of the company comprise E. N. White, treasurer and chairman of the board; J. L. Wyckoff, president; G. R. Burkhardt, vice-president and general manager; H. J. Toepfort, vice-president in charge of development; J. R. Brundage, vice-president in charge of New York office; Peter Peterson, vice president in charge of Chicago office; F. R. Gee, assistant treasurer and comptroller; A. H. Sampson, director of sales promotion. H. F. Burkhardt is manager of the Davenport division of the company.

Incidentally, the development of the company also illustrates in a remarkably clear way the progress and demands of the times in the matter of a very ordinary and every day need—writing paper. Forty years ago the wants of the American people in this respect were surprisingly limited and simple. Today, people insist on having all manner of shapes and styles in paper. As a consequence, the industry has broadened in scope until variety and changing style of product are an important feature of the manufacturing process.

Coast Chlorine Prices Off

[FROM OUR REGULAR CORRESPONDENT]

SAN FRANCISCO, Cal., August 1, 1929.—Due to overproduction of chlorine on the Pacific Coast keen competition has developed in the Pacific Northwest between companies supplying liquid chlorine to pulp and paper mills. Although reports from the East continue to list liquid chlorine in tank cars at 3 cents per pound f. o. b. works, prices in the Northwest have recently been quoted at $55 per ton f. o. b. Tacoma. Since a number of the pulp and paper mills are near Tacoma to enjoy favorable freight rates they are securing liquid chlorine at close to $55 a ton delivered.

Prices for shipment from the Pittsburg, Cal., plant of the Great Western Electro Chemical Company have been adjusted to equalize with Tacoma quotations. The electrolytic chlorine and caustic soda industry on the Pacific Coast had its beginning in 1916 with the building of the Great Western's plant, which now has a capacity of 36 tons of chlorine per day. In 1928 two additional electrolytic plants were constructed in Tacoma, the first by the Hooker Electro Chemical Company with a daily capacity of 26 tons of chlorine and the second by Tacoma Electro Chemical Company, subsidiary of the Pennsylvania Salt Manufacturing Co., with a capacity of 10 tons per day.

This doubling of chlorine capacity has caused keen competition for business, particularly with regard to pulp and paper industry, which is the largest user of chlorine. What effect this condition will have upon the pulp and paper industry in the Middle West and East is the subject of speculation. Some observers lean toward the belief that eastern chlorine manufacturers may feel the necessity of taking steps to prevent their mills from working under considerable handicap in the cost of their material.

Keyes Fibre Company, Inc., Plate and Dish Factory, Waterville, Maine

Announcement

25 PER CENT (APPROXIMATE)

Price reduction

"PAPRUS" PIE PLATES

The Keyes Fibre Company, Inc., are pleased to share with their Wholesale Distributors and through them with their Baker-Consumers throughout the United States and Canada a liberal part of their savings in cost realized as a result of the operation of improved machinery plus improved factory management.

A Twenty-Five (25%) per cent (approximate) reduction in the prices of "PAPRUS" Pie Plates is now effective through our Wholesale Distributors everywhere.

"PAPRUS" PIE PLATES

KEYES FIBRE COMPANY, INC.

General Sales Offices: GRAYBAR BLDG., NEW YORK • *Factory: Waterville, Maine* • JOHN M. HART CO., INC., *Manager of Sales*

To Be Sales Manager for American Tissue Co.

[FROM OUR REGULAR CORRESPONDENT]

MIDDLETOWN, Ohio, August 5, 1929.—Zeiber W. Ranck, president of the Crystal Tissue Company, announces that the position of general manager of sales for his company has been accepted by Sherman Perry, of the American Rolling Mill Company, Middletown, Ohio.

For ten years, Mr. Perry, who was assistant director of publicity for the American Rolling Mill Company, has been active in the merchandising and promotional work of this company. From the iron and steel industry, affecting practically every important line of business, he has gained an intimate knowledge of a wide variety of merchandising problems and their solutions.

Mr. Perry's experience with distributors, dealers, manufacturers, and the general public, in promoting the sale of special analysis iron and steel sheets, also gave him a broad insight into the problems of marketing and distribution that will prove particularly helpful in his new responsibilities. In the course of this work, he was called upon to address groups of distributor salesmen, sheet metal contractors, and retail salespeople on various kinds of merchandising subjects.

His writings on salesmanship, advertising, and business correspondence have been widely distributed, one of his books being used as a standard text in many leading educational and business institutions.

Mr. Perry also represented his company in the merchandising and marketing discussions of the Sheet Steel Trade Extension Committee, and the Producers Council. The former is an organization of leading producers of iron and steel sheet manufacturers whose purpose is to develop new uses for their products and broaden existing markets. The Producers Council is composed of the more progressive manufacturers of building materials who study the needs of architects and how to give them the right kind of information about building products.

While the iron and steel business is widely removed from the paper industry, Mr. Perry will find many striking similarities between the American Rolling Mill Company and the Crystal Tissue Company, both in the caliber of products they make and the policies of management. Many of the things he learned in promoting the sale of a quality product in sheet iron, will find ready application to a product of similar standing in the tissue paper field.

And the same forward policies of the American Rolling Mill Company that encouraged Mr. Perry's unselfish contributions to the iron and steel industry will also be with him at the Crystal Tissue Company to inspire the continuation of his good work in this new field.

Advisory Census Committee Meets

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 31, 1929.—Ways and means to bridge the gap between statistics of production and of distribution and to draw up census schedules which will bring forth facts and figures of current value available within reasonable time limits, were the major topics discussed in the Commerce Department last week at the first meeting of the Advisory Committee for the Census of Manufactures.

Secretary Lamont opened the meeting by welcoming those present. He pointed out that the prime purpose of the Department is to give business what business wants and needs and in order to maintain this policy, particularly with regard to comprehensive undertakings like the coming census, it is vitally essential to have the advice of practical business men and experienced statisticians from industry. He urged the Committee members to talk freely and frankly in order that the Department officials could profit to the utmost from their advice based upon actual experience in making use of Census data.

Colonel L. S. Horner, President of Niles, Bement, Pond Company of New York was named chairman. Mr. Horner pointed out that in his opinion the modern business man is not so much interested in historical facts as he is in current, timely information, explaining that one of the many big problems facing the business executive of this period is to determine what kind of goods will be in demand three years hence. He said in this connection that he did not wish to discount the value of comparable data but rather to emphasize the need for more information of current application in view of changing conditions.

The various members of the committee discussed in turn the census problems primarily from the standpoint of the practical use of statistics of this kind to active business men engaged in widely varied lines.

Indianapolis Paper Demand Dull

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., August 5, 1929.—The local paper trade continues dull with the dullness extending to most lines. Much of this is attributed to mid-summer seasonal influences, but there are some members of the trade who believe conditions generally are not as active as they should be. The fine paper trade is spotted, with some occasional good days and some very bad ones. Volume is holding up with last year, but this is not what the trade wants. Much of this is due, of course, to conditions in the printing and advertising trades. Just now most of the smaller town advertisers whose places of business depend largely on the rural trade, are holding back until harvest. However, this should not be long, for some wheat is being taken to the markets and in another week there should be a marked increase in this business.

Local paper houses report that conditions are much the same in the news print situation, particularly in the smaller towns and for the same causes.

Box papers continue to sell in fair quantities, with some of the factories producing in fair volume and reporting conditions good for the fall season. Other factories report the opposite, however, and all are confining their purchases to current needs.

Little change is seen in the wrapping paper demand, but prices are uncertain, from low to lower. There is a lot of cut-throat competition still in the business and no indications for improvement.

Building papers, however, showed a marked improvement during the past week. Weather conditions have been ideal for building and the trade has jumped accordingly. Much of this demand was held up for weeks because of poor weather conditions.

Swedish Pulp and Paper Prices Unchanged

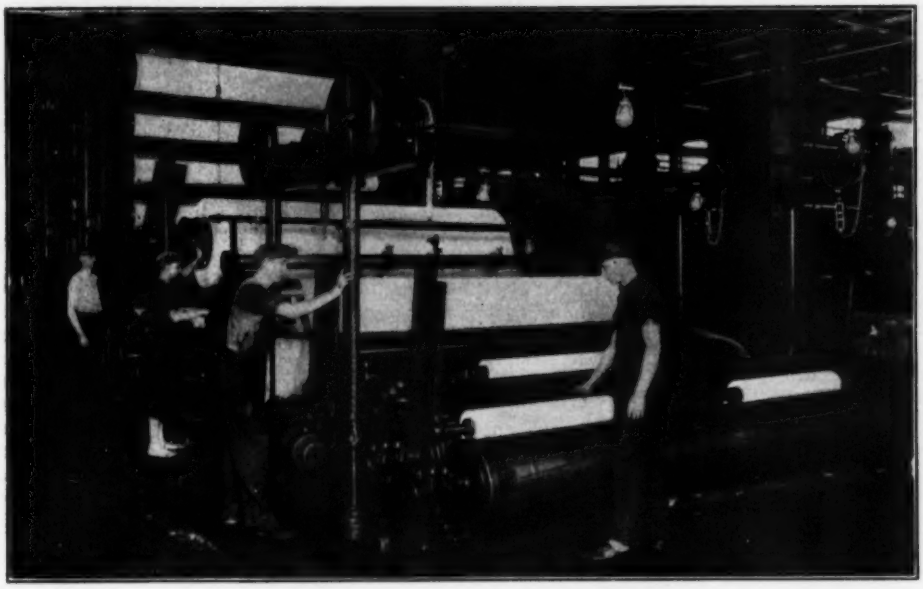
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 7, 1929.—There was no change in Swedish pulp and paper prices during the last half of June and up to July 9, according to a report from Consul General John B. Osborne, at Stockholm. News print paper in rolls for home consumption is quoted at approximately $55 per short ton.

Following a program of new construction and of expansion of existing plants, 117,000 metric tons has been added to the capacity of Swedish sulphate mills. At the same time 100,000 tons has been added to the capacity of the ground wood mills, and 27,000 tons to the capacity of the sulphite mills. There is also under construction near Slottsbron a new sulphate pulp and kraft paper mill which will have an eventual capacity of 20,000 tons each of pulp and paper.

Nekoosa-Edwards Airplane Visits Indianapolis

INDIANAPOLIS, Ind., August 5, 1929.—An all-metal tri-motored airplane belonging to the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., was in Indianapolis recently for a visit with the Capital Paper Company and the Standard Paper Company, distributors for the company. The plane remained during the day and carried employees of both companies over the city and surrounding territory.



"M & W" Four Drum Winder for Book Paper 18" dia. drums 150" face. Photograph taken in mill of Champion Coated Paper Co., Hamilton, O. (This is one of their 14 "M & W" Winders.

25th Anniversary of the "M & W" Four Drum Winder and Slitter

Today it is still the most practical and economical Winder, and is universally used by leading paper makers.

During the past few years improvements, which are fully covered by Patents, have been made to meet conditions of the modern high speed and up-to-date mills.

OVER 1000 IN OPERATION ON ALL GRADES OF PAPER AND BOARD.

Each roll is wound on an independent shaft. If a break occurs, paper on other rolls is not affected; this means less number of rolls to be pieced.

Plugged rolls are wound on Collapsible Shafts.

Paper is wound on shells or cores of any description. This is a great advantage over the Two Drum Winder Type, as the shells or cores do not have to be the same length as rolls of paper.

NO INTERWEAVING OF ROLLS.

Rolls wound any width and of variable diameters.

Shipping rolls made on paper machines with this winder from an uneven sheet of paper, made hard and without wrinkles.

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA

PAPER · MACHINE · BUILDERS

Bates Valve Bag Installs Machinery

[FROM OUR REGULAR CORRESPONDENT]

OSWEGO, N. Y., July 29, 1929.—Installation of machinery in the new plant of the Bates Valve Bag Corporation will be started about September 1, according to Alfred O. Mortenson, chief engineer of the Taggart Paper and Bag Corporation, who has charge of the electrical and mechanical installations in the new plant. A contract has already been awarded for the electrical work and this will require about two months for completion. Mr. Mortenson directed and supervised installation of all electrical equipment in the Taggart plant which resulted in the call for his services on the new plant equipment. Unit motors, one for each machine in the new plant, will be installed and the installation will be one of the most modern and up-to-date devised. Machinery will be shipped from the Bates plant in Chicago which the firm is abandoning in favor of the new location in this city about September 1. The first few machines will be installed and placed in operation before the balance of the equipment arrives in order that some production will be constantly maintained to meet the increased demand for Bates bag filling machinery. As soon as the Oswego machines are in use and production started the rest of the machinery will come from Chicago which will result in all manufacturing operations being conducted at the new plant.

Construction work on the new building is progressing rapidly. Contract for placing the roof on the structure has been awarded to the United States Gypsum Company and the materials to be used were received this week. Interior work is progressing rapidly under a large force of carpenters and within six weeks the building will be completed in practically every detail.

Canadian Woodland Section To Visit U. S.

SYRACUSE, N. Y., August 5, 1929.—Members of the Woodland Section of the Canadian Pulp and Paper Association will invade the United States from Montreal in an automobile caravan August 4 to August 10. This is their regular summer meeting. They will visit various logging operations and such phases of forest management carried on by the State of New York as may be of interest. They will stop over night at Newcomb and proceed to the Indian Lake country to observe the handling of pulpwood properties in that region.

August 6 they will visit the Charles Lathrop Pack Demonstration Forest, three miles north of Warrensburg. This forest is operated by the New York State College of Forestry at Syracuse University. This is the first show window forest where general forest management is carried on to be established in the state. The purpose of the forest is to demonstrate to the public and particularly to the owners of forest properties scientific methods in handling woodlots. This forest embraces 2,250 acres of various types of forest land ranging from some of the finest remaining stands of virgin timber to open fields in need of reforestation. The New York State College of Forestry is also doing experimental work on this tract. Studies are being made on the white pine blister, insect attacks of pine cones and other pathological and entomological phases of forestry.

A. Karoleff of Montreal, who is organizing the trip of the Woodland Section of the Canadian Pulp and Paper Association, states that about fifty persons are expected in the party. Dean Franklin Moon of the New York State College of Forestry will make a special trip to the Pack Forest to receive the visiting foresters and manufacturers from across the border.

To Let Contracts for Conklingville Bridge

[FROM OUR REGULAR CORRESPONDENT]

CONKLINGVILLE, N. Y., August 5, 1929.—It is expected that the Hudson River Regulating District Board will award the contract this week for construction of the million dollar bridge over the Conklingville Reservoir, at Batcherville, which is being financed by prominent paper manufacturing firms in Northern New York. A large number of bids were received on the contract recently and the Pittsburgh-Des Moines Steel Company, of Pittsburgh, submitted the lowest calling for $491,400. Following the award of the contract it is planned to start work on the structure immediately in order that the building of the huge reservoir may not be delayed. The contract calls for completion of the bridge next fall.

It is believed work on the reservoir will be progressed sufficiently by another year in order to furnish partial storage for the spring floods, thereby increasing the volume of water for the big power plants downstream operated by paper manufacturing concerns. Completion of the mammoth project is scheduled for the fall of 1930 and the cost will exceed over $12,000,000. While the Hudson River Regulating Board is issuing bonds to meet the cost of the undertaking the state will be reimbursed for the full amount, the paper plants benefiting through use of the reservoir's water paying a large proportion of the cost. These power plants of which there are many along the river include the big Ford plant at Green Island. It is probable also that other plants will be located in the near future below the dam on privately owned lands to which the state does not hold title. The reservoir will cover 42 square miles obliterating territory in Fulton and Hamilton counties with resultant loss financially which, however, will be compensated to some extent in the matter of damages determined by state agencies.

Thomas Warner Honored By Crown-Willamette

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., August 1, 1929.—Completing fifty years of service with the Crown-Willamette Paper Company, Thomas Warner of Oregon City, Ore., known prominently in Pacific Coast circles of the pulp and paper industry, is to receive official recognition of this notable achievement.

Mr. Warner, accompanied by Mrs. Warner, left for California August 1 on a vacation trip, and while in San Francisco he will be presented with a special diamond emblem as a memorable token of his distinguished career. While in the south Mr. and Mrs. Warner will visit the site of the old mill at Stockton where Mr. Warner first started work for the company which at that time was called the California Paper Company, later merged with the Crown-Willamette.

After working for the company in California for a number of years from August, 1879, Mr. Warner came to Oregon City in 1893 and since that has served in various capacities as machine tender, head paper maker, and for the last 15 years as paper expert. He invented the Warner equalizer for paper stock largely used on the Pacific Coast.

Hawthorne Paper Co. Has Picnic

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., August 5, 1929.—About 250 employees and families of the Hawthorne Paper Company enjoyed their second annual picnic at Ames Resort, West Lake, on Saturday, July 27. It was an ideal day and everyone there had an enjoyable time.

Running races for old and young, slim and fat were run off promptly and suitable prizes were awarded the winners. The men's tug of war provided a real thrill as it took ten minutes for the winning team to win. Swimming races and water events took up the rest of the afternoon until 6 p. m. when supper was served.

The tables groaned under their load of good things to eat which soon disappeared however after 250 people had had their fill.

Every department of the mill and office was well represented including the president of the company, George H. Gerpheide. After supper a very informal dance was held to music supplied by "The Gordon Merrymakers."

The committee which had charge of the picnic was as follows: J. S. Hilliard, Clinton Hughes, Mrs. Margaret Ray, Mr. and Mrs. Harry Pasch, Mrs. Lydia Wheeler, Elza Jansen and Charles Parent. Under their supervision the picnic was a huge success.

Paying attention to the little things that most men disregard—is what makes a few men rich.
Henry Ford.

IN most any line of manufacturing—automobiles, radios, washing machines or what not—the quality that is "just a bit better" is generally the result of concentrated attention on the seemingly minor details of production that other manufacturers are satisfied to overlook.

In the paper industry this is particularly true. Ordinary quality—quality that "gets by"—is easy to obtain. But the quality that rises above competition and enjoys handsome volumes is the quality that can only be obtained by constant experimenting, testing, improving and scientific study.

Valley Laboratory Equipment consists of:

Laboratory Beater
Sheet Mould
Hydraulic Press
Hot Plate
Couch Roll
Drying Oven
Flat Screen
Size Tester

The paper testing laboratory is a short cut to *experience*.. Developments are taking place so fast that no mill can hope to keep abreast of the times by carrying on its experimental work in the mill itself. Many mills are also using Valley laboratory equipment for mill control.

Let us mail you an interesting booklet which tells the complete story of what Valley Laboratory Equipment is doing to answer these important needs throughout the paper industry. Write for it. Address the Valley Iron Works Co., Appleton, Wis.

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Equipment for Paper and Pulp Mills

New York Office: 350 Madison Avenue
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New York Trade Jottings

The United Paperboard Company has passed the dividend due at this time on the preferred stock. The last payment was 1½ per cent quarterly on April 15, 1929.

* * *

Pierre S. du Pont, chairman of E. I. du Pont de Nemours & Co., arrived in New York last Friday aboard the Cunard liner *Berengaria*, after a five weeks trip abroad.

* * *

International Paper and Power Company has declared a quarterly dividend of 60 cents a share on the Class A common stock of the company, payable August 15 to stock of record August 1.

* * *

The Board of Directors of the International Paper Company, New York, have declared a quarterly dividend of 60 cents a share on the common stock of the company, payable August 15 to common stock holders of record August 1.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, is visiting the Newfoundland paper mills this week. Mr. Kellogg left New York last Friday for Norfolk, Va., where he boarded one of the International Paper Company's steamers for Corner Brook. He was accompanied by his wife.

* * *

Sustaining a protest of James Hastings, New York, the United States Customs Court finds that merchandise known as Zellulon yarn, consisting of cellulose fibers, was improperly taxed by the customs officers at the rate of 35 per cent ad valorem under Paragraph 1313 as a manufacture of paper. Duty is fixed by the court at the rate of only 25 per cent ad valorem under Paragraph 1303 as a manufacture of pulp.

* * *

Thomas J. Burke, Secretary-Treasurer of the Cost Association of the Paper Industry, left on Friday August 2, for Evanston, Ill., where for the second year he is attending the sessions conducted at Northwestern University by the National School of Trade Association Executives. From August 4 to 17 his address will be care of National School for Trade Association Executives, Commerce Building, Northwestern University, Evanston, Ill.

* * *

Harold H. Hall, New York manager for Arnold Hoffman & Co., Inc., has retired from business after forty-one years with the concern and its predecessors. Mr. Hall entered the Boston office of the firm in 1888, which was then operating under the name of Mason Chapin & Co., and acquired a taste for chlorine in handling the firm's importations of English bleaching powder at the Hoosac Tunnel Docks. Charles L. Berntson has succeeded Mr. Hall. Mr. Berntson is well known to the trade, having been active on the sales force of the company for a number of years. His former territory in New York and adjacent States has been taken over by Harold E. Becker of Providence.

* * *

The New York Division of the Salesmen's Association of the Paper Industry held its mid-summer golf outing at the Leewood Golf Club in Westchester County on Tuesday, July 30. Competition for the various prizes was keen, low gross being won by G. D. Wyatt of the New York office of Paper Industry, and low net by H. M. Early of the sales department of the International Paper Company. The September outing of the New York Division will be held at the same place on Tuesday September 17. This is the outing at which the New York Division will hold its annual competition with the other divisions of the association for the Harbison Cup. This cup was presented last year by R. B. Harbison, manager of the Chicago sales office of the International Paper Company, and was won last year by the Chicago Division of the association. The division securing three legs on the cup becomes permanent owner of the trophy.

W. A. Yule Made Director of F. C. Huyck & Sons

ALBANY, N. Y., July 28, 1929.—Watson A. Yule has been elected a director of F. C. Huyck & Sons. Mr. Yule is the oldest representative, in point of service, in the sales department of Kenwood Mills, having come with the company in the year 1906, and his many papermill friends will be pleased to learn his fine personality and sound business ability is appreciated and thus recognized. It is expected that Mr. Yule's long contact with the paper mills, which extended many years prior to his association with this company, will bring to the board an experience that will be invaluable.

Mr. Yule's territory for the sale of Kenwood Felts and Jackets comprises the States of Minnesota, Michigan and Wisconsin, and the City of Chicago.

New England Salesmen Plan Outing

The New England Division of the Salesmen's Association of the Paper Industry will hold their annual outing on September 17 at the Sandy Burr Country Club, Wayland, Mass. This country club is located close to the Henry Ford Wayside Inn, made famous by Henry Longfellow, where are now exhibited an extensive collection of antiques collected by Mr. Ford. This outing is not confined solely to members of the New England Division, as all identified with the paper industry are invited. Any information desired may be obtained from Thomas Compton Walsh, vice-president of the New England Division, whose address is 333 Washington street, Boston, Mass.

To Supervise Erection of Machine in Russia

WATERTOWN, N .Y., August 5, 1929.—The Bagley & Sewall Company has appointed a number of skilled engineers and workmen to install a 234 inch Fourdrinier machine in the plant of the Volga River Pulp and Paper Company in Russia. Richard Gray, of this city, who will supervise the installation, is now in England on his way to Russia and the men who will assist him will leave this country early in August. The men who will oversee the work besides Mr. Gray are John Ostling, Kenora, Ont., John Whitehead, Ocean Falls, B. C., Laurence R. Stark, Kapuskasing, Ont., and John D. Amey, Oshtemo, Mich. Messrs. Gray, Ostling, Whitehead and Stark will supervise the erection of the machine while Mr. Amey will oversee the actual running after its erection.

The various parts of the machine built for Russia are now in the process of shipment. The machine itself is extremely modern and is designed for the making of news print paper. It will be driven by a General Electric sectional electric drive.

Amalgamated Paper Co. on New Schedule

FORT EDWARD, N. Y., August 5, 1929.—The Amalgamated Paper Company has completed a change in its working schedule for the operation of the Mechanic street plant on a 24 hour daily schedule. The arrangement was made necessary by the increased volume of orders for the tablets turned out by the firm which has also resulted in greatly enlarged working forces. A number of experienced workers from the Brooklyn branch have also been brought here and it is probable that day and night schedules will be in effect for several months.

Tentative Draft of Paper Schedule Completed

WASHINGTON, D. C., August 7, 1929.—The Senate Finance Committee in executive session late Tuesday afternoon completed a tentative draft of the paper schedule. While members of the committee are not making public their decision it is understood on good authority that all of the rates in the paper schedule remain as they passed the House with the exception of sensitized photographic and wall papers. It was said that the rates on these three classes of paper were reduced so that they are identical with the rates in the present law. It is understood that before the bill is reported out that the Finance Committee will again check over the rates with the possibility that further changes may be made.

Let Us Correct A Mistaken Idea!

It is generally known that the wide use of the popular Ross Systems for complete mill heating and ventilating keeps our various staffs busily engaged in providing the large number of required installations. This is a fact!

But it is not a fact that we are interested only in the requirements for large installations of the better known Ross Systems such as the Briner Economizer, Grewin System, Grinder Exhaust System, Vapor Absorption and others. Nothing could be farther from the fact!

All our time is devoted exclusively to proper equipment of every type coming under the head of heating, ventilating, drying and conditioning equipment. We are naturally the logical source for all such apparatus—of any type, in any quantity.

Orders or requests for our estimates on supplying auxiliary equipment such as fans, blowers, heaters, etc., will demonstrate our ability to fulfill such requirements more economically, more efficiently and in less time than is ordinarily expected. We will welcome your inquiries.

Let Our Experience Save You Money

Let Us Estimate On Equipment Such As

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- Calender Cooling
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- Locker Room Ventilation
- Fans
- Unit Heaters
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Our office nearest to you will promptly furnish any information desired regarding such equipment.

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ROSS ENGINEERING OF CANADA, LIMITED

NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

Paper Ranked Fourth Among the Industries

(*Continued from page 23*)

print in the United States has declined in recent years and in 1928 was about 22 per cent less than in 1926; meantime imports from Canada have markedly grown and are now much larger than domestic production. Paper prices showed little change during 1928, but there was a considerable decline in the quotations for paper board.

Imports of paper base stock in 1928 were slightly less in value than the year before, though somewhat greater in quantity. Total imports of base stocks and of paper itself were valued at $283,000,000, about 3 per cent more than the year before, and 20 per cent more than in 1924. Exports of paper, apart from paper stock and printed matter, have also increased and the value in 1928 was 15 per cent greater than in 1927. The value of books and printed matter exported likewise increased nearly 10 per cent.

Census Statistics of the Industry

In 1927 for the first time the Bureau of the Census distinguished the wood pulp industry from the manufacture of paper. The two branches together employed in that year 123,360 wage earners and added to materials by manufacture a value of $414,000,000. The paper industry proper had a gross value of product of $920,000,000, of which $347,000,000 represented the value added by manufacturing processes (Table 1). The United States ranks first among the paper-producing countries of the world, with Germany, Canada, and Great Britain following.

At the close of 1927 there were 1,942 paper machines in operation in the United States with an annual capacity of about 12,500,000 tons; the actual production during the year was 10,002,000 tons, or 80 per cent of capacity. Machinery manufacturers reported 33 new machines installed during 1928, with an annual capacity of 612,000 tons. There were at the same time numerous increases in capacity from improvement in existing machines, so that the total capacity at the end of the year was approximately 750,000 tons greater than at the end of 1927.

The rapid progress of the kraft pulp, paper, and board industry in the South continued during 1928. The industry in the Pacific Northwest also showed marked expansion in all lines; a number of new mills were placed in operation and several important mergers were effected. Eastern paper concerns have entered the northwest territory. This development has been largely the result of an abundance both of raw material and of hydroelectric power in that part of the country, combined with a considerable improvement in transportation conditions.

TABLE 2
SOURCE OF PULPWOOD USED FOR PAPER CONSUMED IN AND EXPORTED FROM THE UNITED STATES
[Wood pulp and paper, imported or exported, converted into terms of pulpwood. In thousands of cords]

Item	1899	1904	1909	1914	1919	1921	1923	1925	1926
Pulpwood Consumed									
Total	2,075	3,397	4,572	6,071	7,426	6,888	10,113	10,965	12,341
For:									
Domestic requirements	1,950	3,259	4,420	5,886	6,806	6,649	9,924	10,753	12,129
Export	125	138	152	185	620	239	189	212	212
Source:									
Domestic	1,617	2,476	3,210	3,642	4,446	3,740	4,637	5,006	5,479
Imported from Canada	420	763	1,025	1,630	2,741	2,378	3,859	4,235	4,973
Other imports	38	158	337	799	239	770	1,617	1,724	1,889
Per cent from each source:									
Domestic	78.0	72.9	70.2	60.0	59.9	54.3	45.8	45.7	44.4
Imports from Can.	20.2	22.5	22.4	26.8	36.9	34.5	38.2	38.6	40.3
Other imports	1.8	4.6	7.4	13.2	3.2	11.2	16.0	15.7	15.3

Source: Forest Service, Department of Agriculture.

TABLE 4
ESTIMATED PRODUCTION OF SPECIFIED KINDS OF PAPER
[In thousands of short tons]

Quarter	Paper: Total	News-print	Box board	Book	Wrapping	Writing (fine)	All other	Wood pulp: Mechanical	Wood pulp: Chemical
1925									
Jan.-Mar.	1,971	372	578	326	274	113	308	428	633
April-June	1,953	391	564	323	265	112	298	528	608
July-Sept.	1,965	364	615	311	270	107	296	320	588
Oct.-Dec.	2,033	403	616	324	279	117	295	433	641
1926									
Jan.-Mar.	2,084	416	620	342	271	121	314	439	662
April-June	2,089	428	637	338	260	117	309	542	671
July-Sept.	2,074	415	663	320	267	110	299	389	657
Oct.-Dec.	2,073	418	609	346	277	112	312	479	684
1927									
Jan.-Mar.	2,014	389	583	355	276	108	303	438	672
April-June	2,015	386	621	325	267	117	300	456	649
July-Sept.	2,001	361	649	320	269	108	295	303	629
Oct.-Dec.	1,995	350	625	331	275	114	300	392	639
1928									
Jan.-Mar.	2,092	354	643	383	291	116	302	418	648
April-June	2,146	365	692	378	280	119	311	440	651
July-Sept.	2,038	329	657	365	273	108	306	335	624
Oct.-Dec.	2,138	361	691	381	284	112	309	412	660

Source: Department of Commerce, Survey of Current Business, which see for original sources and method of compilation.

Pulpwood Consumption and Wood Pulp Production

According to the Forest Service, 12,341,000 cords of wood were required for the manufacture of paper in the United States in 1926. Of this, 44.4 per cent was of domestic origin, 40.3 per cent came from Canada, and the remainder came from other foreign countries, as shown in Table 2. Later data are not available.

Total wood pulp production in the United States in 1927 (Table 3) was 4,313,000 tons as compared with 4,395,000 tons in 1926, according to the Bureau of the Census. The making of this pulp required 6,723,000 cords of pulpwood at an average value of $14.17 a cord, as against 6,766,000 cords at an average value of $14.96 in

TABLE 3.—PRODUCTION OF PAPER AND WOOD PULP—CENSUS RETURNS
[Quantities in thousands of short tons; values in thousands of dollars]

Product	Quantity 1914	1921	1923	1925	1927	Value 1914	1921	1923	1925	1927
Total paper	5,270	5,431	8,029	9,182	10,002	291,588	585,735	812,509	862,589	872,207
Standard news print, in rolls and sheets	1,313	1,237	1,521	1,563	1,520	52,943	114,315	110,865	106,083	99,069
Hanging	97	57	111	105	110	4,489	5,949	10,285	9,506	8,748
Poster, novel, tablet, lining, etc.	[1] 8	35	55	84	183	[1] 491	4,174	4,960	7,096	15,573
Book [2]	904	792	1,208	1,328	1,329	70,102	122,930	169,286	175,525	160,869
Cover	22	16	21	24	26	2,809	4,112	4,973	5,806	5,938
Fine	248	231	377	474	509	34,055	61,314	89,098	105,474	105,148
Wrapping (or coarse)	[3] 911	827	1,184	1,292	1,525	[3] 51,308	103,259	141,532	143,587	162,580
Boards	1,292	1,740	2,793	3,287	3,774	44,870	104,346	182,867	192,942	211,264
Tissue	115	186	251	281	316	11,536	33,647	44,144	45,735	46,617
Absorbent	14	12	16	51	64	1,458	2,667	3,777	10,000	13,331
Building	244	217	345	[4] 555	626	9,476	12,842	23,529	[4] 44,031	40,062
All other	103	81	148	138	21	8,053	16,179	27,195	16,803	3,008
Wood pulp:										
Total [5]	2,893	2,876	3,789	3,962	4,313	([6])	([6])	([6])	([6])	207,333
For sale or transfer	912	868	1,063	913	561	31,678	63,374	65,497	55,200	38,272

[1] Reported as poster only.
[2] Excludes plate, map, woodcut, etc., paper and also lithograph paper in all years except 1927.
[3] Figures are not strictly comparable with later years owing to the exclusion of bag paper which was included in "All other paper."
[4] Not strictly comparable with earlier years owing to a change in classification.
[5] Figures include wood pulp consumed in mills in which manufactured.
[6] Not available.
Source: Bureau of the Census.

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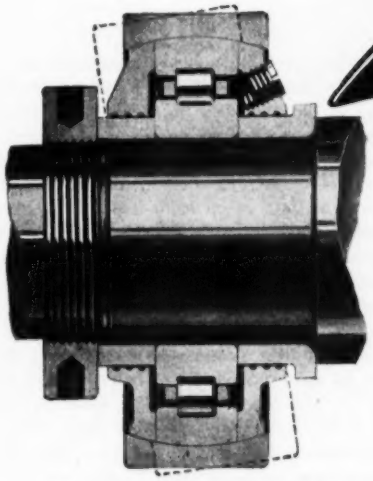

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1926. The gradual slight decline in average cost for pulpwood may be accounted for through the increase in consumption of wood by the mills on the Pacific coast, where the average cost is considerably lower than in the East.

In 1928 the total production of pulp was 4,427,000 tons, of which 1,570,000 tons was mechanical ground wood and the balance chemical cellulose, according to estimates of the American Paper and Pulp Association. Total production increased over 2.5 per cent as compared with 1927.

By far the larger part of this pulp was consumed by the producing mill for the manufacture of paper. During 1927 the most important pulp-producing States were Maine, Wisconsin, New York, Washington, and Pennsylvania, in that order, the first three of which combined produced over 49 per cent of the total.

Production and Consumption of Paper

Unofficial estimates of the American Paper and Pulp Association place the production of paper in 1928 at 10,250,000 tons, an increase of 2.5 per cent over 1927. Of this total, the largest individual item of production was board with about 4,000,000 tons, followed by wrapping with 1,600,000 tons, news with 1,415,000 tons, and book with 1,409,000 tons.

During 1927 the total production of paper (Table 3) was, according to the biennial census, 10,002,000 tons, as compared with 9,750,000 tons in 1926 as estimated by the American Paper and Pulp Association. This was an increase of less than 3 per cent as against a 9 per cent increase the year before. The largest individual item of production in 1927 was boards with 3,774,000 tons, wrapping, news print, and book paper following in the order named. The increase over 1925 was shared by all classes except news print, and was very marked in the case of wrapping paper and boards.

It should be noted in comparing the production data in Table 3 with the data covering the last four years shown in Table 4 that the former are based on the biennial census return, while the latter have as sources several trade associations whose memberships do not include the entire industry.

TABLE 5
NEWS PRINT: PRODUCTION IN UNITED STATES AND CANADA, TOTAL IMPORTS AND EXPORTS, AND IMPORTS OF UNITED STATES FROM CANADA
[In thousands of short tons]

Calendar year	Domestic production [1]	Total imports	Total exports	Imports from Canada	Canadian production
1913	1,305	220	43	(2)	350
1918	1,260	596	97	581	735
1919	1,375	628	110	624	803
1920	1,512	730	46	679	875
1921	1,225	793	17	657	808
1922	1,448	1,029	26	896	1,082
1923	1,485	1,309	16	1,108	1,266
1924	1,481	1,357	17	1,197	1,353
1925	1,530	1,448	23	1,295	1,522
1926	1,678	1,851	19	1,657	1,882
1927	1,486	1,987	12	1,776	2,087
1928	1,415	2,157	11	1,926	2,381

[1] Figures for census years differ slightly from those reported by the Bureau of the Census.
[2] Figures by calendar years are not available. The figures for fiscal years show that 99 per cent of the total imports were from Canada.
Sources: News Print Service Bureau; imports and exports from Bureau of Foreign and Domestic Commerce.

TABLE 7
INDEX PRICES OF SELECTED CLASSES OF PULP AND PAPER
[Monthly average, 1923-1925 = 100]

Month	News-print	Book paper [1]	No. 1 jute manila	Boards [2]	Ground wood pulp	Domestic bleached sulphite pulp	General wholesale price index, all commodities
1920: July	136.6	200.3	162.8	239.5	442.7	303.0	164.6
1921: July	129.8	109.1	93.0	65.9	82.4	[3] 113.6	92.8
1922: July	95.6	96.6	98.8	67.4	85.5	101.0	98.7
1923: July	103.8	101.9	98.8	114.8	106.9	113.6	97.7
1924:							
July	99.7	102.6	87.2	77.3	84.0	88.4	94.9
December	99.7	96.6	104.7	82.3	84.0	87.1	100.8
1925:							
July	95.6	94.8	107.6	86.8	85.5	94.7	103.6
December	95.6	94.8	104.7	86.8	85.5	101.0	102.7
1926:							
July	88.8	94.8	104.7	82.3	91.6	94.7	98.8
December	88.8	94.8	104.7	82.3	91.6	92.2	97.2
1927:							
April	88.8	91.2	104.7	82.3	82.4	92.2	93.0
July	88.8	90.1	104.7	92.3	82.4	85.9	93.4
October	88.8	90.1	104.7	97.3	82.4	85.9	96.3
December	88.8	90.1	104.7	97.3	79.4	80.8	96.1
1928:							
April	88.8	90.1	104.7	87.3	79.4	85.9	96.7
July	88.8	90.1	104.7	92.3	79.4	85.9	97.6
October	88.8	90.1	104.7	82.3	79.4	85.9	97.1
December	88.8	84.1	104.7	62.4	79.4	85.9	96.0

[1] Based on average prices of machine-finished and supercalendered book paper.
[2] Based on average prices of newsboard and chipboard.
[3] Index is for August, 1921; prices for month of July were nominal.
Sources: News print index was based upon Federal Trade Commission quotations, to and including the second quarter, 1923; all other paper and pulp index numbers compiled from minimum market prices as given in the Paper Trade Journal in its issues nearest the 15th day of the month. Wholesale price index of all commodities from United States Department of Labor.

According to the estimates of several trade associations the consumption of paper in the United States in 1927 was approximately 5 per cent greater than in 1926, and was about 12,390,000 tons, of which about 3,750,000 tons consisted of board of all kinds and 3,500,000 tons of news print. Nearly 57 per cent of the news print was imported from Canada. From data available on production, exports, imports, and stocks on hand it is calculated that the per capita consumption of paper in the United States was slightly under 210 pounds in 1927 and slightly over that quantity in 1928. This increase has been due largely to a greater number of uses for paper and paper products, normal increases in the circulation of publications, and the growth of advertising.

Complete data for news print compiled by the News Print Service Bureau (Chart I) show that the production in the United States in 1927 was 16 per cent less than in 1926, while in 1928 it again dropped nearly 5 per cent. On the other hand Canada's production in 1927 increased nearly 11 per cent over 1926 and in 1928 showed a further growth of more than 14 per cent, with a corresponding growth of imports from Canada into this country.

The monthly production figures in Table 6 show a marked decreases for each month during 1928 as compared with the previous year, except during May, October, and November. This tendency was equally marked in 1927 as compared with 1926. The increase in imports during 1928, over 8 per cent as compared with 1927, was distributed over practically all months during the year.

TABLE 6.—PRODUCTION AND IMPORTS OF NEWS PRINT, BY MONTHS
[In short tons]

Month	Production				Imports			
	1925	1926	1927	1928	1925	1926	1927	1928
Total	1,530,316	1,678,669	1,485,721	[1] 1,414,952	1,448,425	1,850,675	1,987,065	2,156,866
January	129,442	140,026	135,755	119,525	112,586	126,953	166,102	177,808
February	114,268	129,622	121,318	112,302	110,942	133,219	134,209	172,596
March	127,835	145,910	133,731	121,682	127,918	158,400	166,532	172,895
April	133,098	145,327	130,236	117,553	123,673	168,463	147,635	163,179
May	129,463	141,032	127,395	128,065	123,457	134,870	170,545	183,890
June	128,847	142,166	125,284	119,673	126,407	161,817	161,473	163,807
July	121,550	140,516	118,929	109,861	117,479	153,865	159,687	174,667
August	121,339	139,259	127,129	116,120	102,741	161,063	167,475	173,872
September	121,594	136,167	114,735	102,821	111,188	139,713	168,630	164,648
October	135,662	143,148	114,675	122,415	145,088	172,603	175,484	200,362
November	130,539	140,427	117,222	123,646	124,861	169,549	188,624	201,415
December	136,681	135,069	119,312	115,049	122,085	170,158	180,670	207,727

[1] Figures include 6,240 short tons not reported monthly by mills.
Sources: Production from News Print Service Bureau; imports from Bureau of Foreign and Domestic Commerce.

In the Paper Industry . . .

Austin Clients Include the Following

Algonquin Paper Corp.	Ogdensburg, N. Y.
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Angelus Paper Box Co.	Los Angeles
A. P. W. Paper Co.	Albany, N. Y.
Bailey Wall Paper Co.	Cleveland
Bogota Paper & Board Co.	Bogota, N. J.
Reg. N. Boxer Co.	Toronto, Ont.
California-Oregon Paper Mills	Los Angeles
Chase Bag Co.	Buffalo
Chase Bag Co.	Goshen, Ind.
Chase Bag Co.	Toledo, Ohio
Chillicothe Paper Co.	Chillicothe, Ohio
Cleveland-Akron Bag Co.	Boston Mills, Ohio
Columbia River Paper Mills	Vancouver, Wash.
Continental Paper Co.	Bogota, N. J.
Federal Paper Board Co.	Bogota, N. J.
Flintkote Co.	East Rutherford, N. J.
Foster Box Board Co.	Utica, N. Y.
Robert Gair Co.	Piermont, N. Y.
Hammermill Paper Co.	Erie, Pa.
Hinde & Dauch Paper Co.	Sandusky, Ohio
Holyoke Gummed Prod. Co.	Holyoke, Mass.
Hygrade Corrugated Paper Products Co.	New York City
Ideal Corrugated Box Co.	Parkersburg, W. Va.
Inland Empire Paper Co.	Millwood, Wash.
The Jaite Company	Jaite, Ohio
Jordan Storage & Distributing Co.	Seattle
F. J. Kress Box Co.	Pittsburgh
Log Supply Co.	Berthierville, Que.
Morgan Wall Paper Co.	Chicago
Northwestern Paper & Pulp Co.	Astoria, Ore.
Oregon Pulp & Paper Co.	Salem, Ore.
Oswegatchi Paper Co.	Gouverneur, N. Y.
Oswego Falls Corp.	Fulton, N. Y.
J. B. Pearce Co.	Cleveland
Peninsular Paper Co.	Ypsilanti, Mich.
Royal & Co.	Bryn Mawr, Pa.
Schumacher Wall Board Corp.	Los Angeles
Schumacher Wall Board Corp.	Seattle
The Simplex Paper Corp.	Palmyra, Mich.
Southern Waxed Paper Co.	Atlanta
Spaulding Pulp & Paper Co.	Newberg, Ore.
Standard Wall Paper Co.	Hudson Falls, N. Y.
Standard Wall Paper Co.	Joliet, Ill.
Union Bag Co.	Vancouver, Wash.
Vancouver Kraft Co., Ltd.	Vancouver, B. C.
Warren Mfg. Co.	Bloomsbury, N. J.
Warren Mfg. Co.	Milford, N. J.
West Carrollton Parchment Co.	Dayton, Ohio
Western Waxed Paper Co.	Los Angeles
The White Tar Co. of N. J.	Kearny, N. J.

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Price Movement and Market Conditions

The Bureau of Foreign and Domestic Commerce has compiled a series of index numbers of prices of pulp and paper (Table 7) based on data compiled from trade journals, which is a continuation of the series established by the Federal Trade Commission. These index numbers have been recomputed in this chapter, using the monthly average of the years 1923 to 1925 as the base.

The price of news print remained steady from early 1926 to the close of 1928, while book paper, after holding steady throughout 1925 and 1926, dropped early in 1927 and fell still further late in 1928. Board fluctuated greatly between the first part of 1926 and the third quarter of 1928, finally reaching a new low level in December of the latter year. This decline may be accounted for in part by a slackening in building-trade activities. Jute manila has remained steady since the latter part of 1925. Ground wood pulp, which increased somewhat in price during 1926 as compared with 1925, declined early in 1927 and made a still further drop late that year, where it has remained since. Domestic bleached sulphite pulp dropped between April and July, 1927, and made a further decline in the final quarter of the year, but recovered to its 1927 midsummer level early in 1928 and has since remained there. The general wholesale price index of all commodities, which is shown for comparison, declined in early 1927 but advanced during the latter part of the year and remained fairly steady in 1928. More detailed prices of news print are shown in Table 8.

TABLE 8
NEWS PRINT PRICES
[In cents per pound]

Year	January	April	July	October	Yearly average
1913	1.92	1.94	2.01	1.99	1.96
1919	3.68	3.64	3.63	3.84	3.74
1920	4.36	4.73	5.21	5.79	5.10
1921	6.08	5.41	4.77	4.19	5.02
1922	3.76	3.57	3.54	3.61	3.62
1923	3.75	3.83	3.80	3.75	3.78
1924	3.75	3.75	3.65	3.65	3.70
1925	3.50	3.50	3.50	3.50	3.50
1926	3.25	3.25	3.25	3.25	3.25
1927	3.25	3.25	3.25	3.25	3.25
1928	3.25	3.25	3.25	3.25	3.25

Sources: Federal Trade Commission to and including April, 1923; thereafter minimum quotations published in the issue of the Paper Trade Journal nearest the 15th of each month.

Imports

Imports of paper base stocks and paper have steadily increased during recent years both in quantity and value. The total value of pulp wood, pulp, and paper (excluding printed matter), imported during 1928 (Table 9) was over $283,000,000, an increase of 20 per cent over 1924 and of nearly 3 per cent over 1927. Imports of base stocks (of which wood pulp represents about 75 per cent) were valued at $112,296,000, or about 1 per cent less than in 1927. Foreign purchases of paper and its products, except printed matter, reached a total value of $156,385,000 or nearly 5 per cent more than in 1927.

Much the largest class of paper imports is news print; the quantity of news print imported in 1928 was 8½ per cent greater than in 1927, the increase in value being 6 per cent. Increases appeared in imports of tissue paper and paper boxes, but most of the minor items registered decreases in value as compared with 1927.

Exports

The United States is a large exporter of paper other than news print, and also of books and other printed matter. The total value of foreign sales of paper stock, paper and paper products in 1928 (Table 9) was $61,286,000, an increase of over 8 per cent as compared with 1927, and of 30 per cent as compared with 1924. Exports of paper alone, which represent about 50 per cent of the total, showed an increase of 15 per cent in value over 1927, most of the gain appearing in book paper, writing paper, wall board, and wrapping paper, while the relatively small item of news print decreased.

Arranging Construction for Willapa Mill

PORTLAND, Ore., August 2, 1929.—The Willapa Pulp and Paper Company which has started a mill at South Bend, Wash., has contracted with the Larson Lumber Company to furnish 150,000 board feet of timbers and ties for the railroad tracks, timbers and piling caps for the mill construction.

TABLE 9.—EXPORTS AND IMPORTS OF PULPWOOD, WOOD PULP, PAPER, PAPER MANUFACTURES, AND PRINTED MATTER

Note.—Figures for quantity are in short tons for all items except exports of wall board, shown in thousands of square feet, and imports of pulp woods, shown in cords.

Item	Quantity (short tons)				Value (thousands of dollars)			
	1925	1926	1927	1928	1925	1926	1927	1928
EXPORTS								
Total pulpwood, pulp and paper products	.....	.....	.....	.....	50,664	53,726	56,543	61,286
Paper base stocks	.....	.....	.....	.....	5,783	4,964	5,412	6,104
Wood pulp	37,995	34,220	32,006	33,484	2,441	2,084	1,534	1,779
Pulpwood, rags, and other paper stock	.....	.....	.....	.....	3,342	2,879	3,879	4,325
Paper, except printed matter, total	.....	.....	.....	.....	23,844	26,830	26,946	30,933
News print	22,738	19,258	12,329	11,390	2,025	1,849	1,191	866
Book paper, including surface coated	10,575	11,994	11,009	17,833	2,496	2,467	2,139	2,927
Wrapping paper	14,368	16,508	16,156	18,379	2,173	2,234	2,256	2,587
Writing, envelopes, and cover paper	4,134	7,677	9,047	15,538	1,606	2,628	2,810	3,775
Tissue, toilet, and crepe paper	4,393	4,836	5,165	5,722	1,563	1,728	1,760	1,782
Bristol board and strawboard	16,754	20,920	20,200	22,052	1,711	2,203	2,253	2,371
Wall board of paper or pulp (sq. ft.)	14,097	25,476	45,909	61,540	473	879	1,506	2,069
Box board	11,241	26,234	21,817	24,335	796	1,502	1,351	1,354
Bags, boxes, and cartons	14,988	15,700	17,454	18,795	2,435	2,459	2,599	2,700
Vulcanized fiber, sheets, strips, rods, and tubes	2,790	2,677	2,143	2,762	1,664	1,590	1,264	1,455
All other	.....	.....	.....	.....	6,900	7,291	7,815	9,047
Books and other printed matter, including playing cards	.....	.....	.....	.....	21,037	21,934	24,185	24,249
IMPORTS								
Total pulpwood, pulp, and paper products	.....	.....	.....	.....	251,374	275,412	276,158	283,102
Paper base stocks	.....	.....	.....	.....	118,795	121,506	113,632	112,296
Pulp woods (cords)	1,483,231	1,383,619	1,596,787	1,546,338	15,130	14,176	16,484	16,157
Wood and other pulp	1,665,992	1,735,732	1,679,518	1,762,324	81,986	91,487	86,086	83,920
Rags and other paper stock	386,251	334,561	280,946	329,686	21,679	15,842	11,062	12,218
Paper, except printed matter, total	.....	.....	.....	.....	119,201	139,499	149,365	156,385
Standard news print	1,448,425	1,850,675	1,987,065	2,156,866	103,717	123,982	131,489	139,411
All other printing paper	8,305	8,188	5,210	3,670	808	827	512	343
Wrapping paper	9,985	7,212	7,556	13,495	875	758	855	853
Pulpboard and other paper board	51,526	55,493	[1] 30,064	37,378	2,659	2,634	2,250	1,649
Cigarette paper	5,326	4,138	7,343	5,845	2,935	2,183	4,292	3,214
Tissue paper	1,357	1,441	1,616	1,785	1,164	1,405	1,836	2,053
Paper boxes	1,165	1,052	1,252	1,402	1,350	965	1,447	1,787
All other	.....	.....	.....	.....	6,692	6,747	6,685	7,073
Books and other printed matter	.....	.....	.....	.....	13,378	14,407	13,161	14,422

[1] Figure represents pulpboard only; quantity for "Other paper board," not reported for 1927.

Source: Bureau of Foreign and Domestic Commerce.

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BUSINESS AT RECORD LEVEL

The business of the United States in 1928, according to the initial volume of the Commerce Yearbook for 1929, released on Monday of this week by the Department of Commerce, "was on the highest level ever attained, continuing the prosperity characteristic of every year since 1921 and reflecting the steadily increasing efficiency of both industry and trade."

Manufacturing output, described as "the most comprehensive measure of economic activity," was 3 percent above the previous peak of 1926, 5 per cent above 1927, and represented the largest ever reached.

Mineral output, chiefly because of smaller coal production, was slightly less than in 1926 or 1927.

Tonnage of railway traffic increased slightly, and on account of reduced operating expenses the net operating income of the railways was 10 per cent greater than in 1927.

Export trade increased 5½ per cent in value, and in quantitative terms was greater than during the abnormal war years. While the value of imports declined slightly, this was owing to lower prices of import commodities.

Wholesale prices in domestic markets averaged a little higher than in 1927, mainly because of advance in farm products, but the decline in that class of commodities after the large harvest brought the general price index for December, 1928, to the same level as twelve months before.

The manufacturing production of 1928 was 66 per cent above that of 1921.

Of twelve groups of manufacturing industries nine showed increases in output as compared with 1927, the greatest relative gains being in iron and steel, automotive, rubber tire and petroleum refining groups. Others with increased output were food products, paper and printing, cement, brick and glass, non-ferrous metals and tobacco manufactures.

The review from the yearbook on Paper and Printing is present fully elsewhere in this issue of the PAPER TRADE.

An insignificant decline occurred in the leather and shoe group, while production of textiles and lumber was from 5 to 6 per cent less than in 1927.

Competition with coal of petroleum and water power was given as the reason for the decline in mineral output.

Increases in activities of individual manufacturing and mining industries in 1928, as compared with 1927, were as follows:

Iron ore, 4 per cent; pig iron, 4 per cent; steel ingots, 15 per cent; coke, 3 per cent; silk goods (loom activity), 7 per cent; pork (hogs slaughtered), 14 per cent; plate glass (polished), 11 per cent; automobiles, 28 per cent; rubber tires (casings), 21 per cent; copper, 9 per cent; zinc, 2 per cent; cement, 2 per cent; crude petroleum, one-tenth of 1 per cent; gasoline, 14 per cent; cigarettes, 6 per cent.

Decreases occurred in the following groups:

Beef (cattle slaughtered), 11 per cent; cotton goods (mill consumption of cotton), 5 per cent; wool goods (machinery activity), 2 per cent; bituminous coal, 5 per cent; anthracite, 4 per cent.

The construction industry was very active in 1928, there being an increase of 14 per cent in the floor space of buildings erected, as compared with 1927, and 5 per cent in the value of all construction projects. About the same changes appeared in the major subclass of residential buildings, while contracts for public works and utilities increased 6 per cent in value.

Employment in 1928 ranged about the same as in 1927, in which year the downward trend in the number of workers that had been noticed since 1919 was nearly checked.

The stationary position or decline in the number of workers in manufacturing, agriculture, railway transportation and perhaps in mining, in the face of a growth in population, was attributed to a movement into other occupations, such as distribution and the professional personal services.

"The marked increase in the efficiency of industry, reflected in a gain since 1919 of one-third in output per worker in factories and mines and on farms and railways," it was stated, "has made it possible to set free workers for those other activities which contribute to still higher living standards."

It was estimated that larger earnings were made by workers in factories in 1928 than in 1927.

"Money wages have increased much more, as compared with pre-war figures, than the cost of living," it is declared, "and in 1919 the cost of living was materially higher than now."

Commercial failures were more numerous in 1928 than in any earlier year on record, the Yearbook asserts, "but the total liabilities were smaller than in the years 1921 to 1924, inclusive, and were also less than in 1927."

Private experts fix the total national income of the United States at from $80,000,000,000 to $90,000,000,000 annually. The value of agricultural products is about $13,000,000,000. The value added to materials by factories, not including small shops, is about $27,000,000,000. The annual value of construction is about $8,000,000,000, raw mineral products $4,500,000,000, and railway transportation $6,250,000,000; while the value of electric current, street railway service and telephone service each is between $1,000,000,000 and $2,000,000,000.

REFORESTATION IN NEW YORK

In carrying on reforestation work with which the paper manufacturing industry is vitally connected New York State has established nurseries at Saratoga Springs, Lowville, Lake Clear Junction, Horseheads and Painted Post. The output of these nurseries has been steadily increased and last year about 25,000,000 tress were shipped from these plantations and planted on idle

land. Altogether from 1901 to 1927 there have been planted in the state slightly over 68,000,000 trees or enough to reforest 60,000 acres. However, this is only a fair start as there has been reforested only two per cent of our idle forest land and at the present rate of planting it will take nearly 100 years to plant all of this non-producing land.

The state has been doing what it can in reforesting while such men as Mr. Luther, of Saratoga Springs, who is the largest individual tree planter, are doing remarkably well. Several of the large paper companies including Finch, Pruyn & Co., Glens Falls; St. Regis Paper Company, Gould Paper Company, Lyon Falls, and the Blount Lumber Company, Lacona, have planted many millions of trees while several larger cities maintain forests on their watersheds. There are several community forests and school forests as started in the town of Watson by the rural school. The Jefferson County Fish and Game Club planted 35,000 trees in 1926 and similar work should be encouraged in such organizations. It is the opinion of prominent paper manufacturers that the planting of trees and care of wood lots by farmers should be given all the emphasis possible for in this country the farm wood lots aggregate nearly 200,000,000 acres, a larger wooded area holding than that owned by lumbermen and all other holders combined. It is also felt that probably no other American industry would feel so quickly or suffer so severely from a continued shortage of timber as farming.

Unloading Wood Pulp at Oswego

[FROM OUR REGULAR CORRESPONDENT]

OSWEGO, N. Y., August 5, 1929.—The unloading of a large cargo of wood pulp was completed here during the week by a large force of men in the employ of local paper mills. Excellent time was made in removing the cargo which consisted of 2,000 tons of wood pulp consigned to the plant of the Taggart-Oswego Paper and Bag Corporation. The pulp was loaded in box cars and later taken to the plant. About 90 cars were required in transporting the cargo from the dock to the Taggart plant. The steamer used in transporting the product will return to Three Rivers, Quebec, for a cargo of baled pulp which will be delivered to the plant of the Oswego Board Corporation.

Officials of the St. Regis Paper Company announced that the experiment of bringing wood pulp from the lower St. Lawrence to this city has proven successful from every angle and Joseph A. Quinlan, traffic manager, said there was not the slightest doubt but that shipments of raw materials by water will be continued. The initial cargo proved the economy and efficiency of handling bulk cargoes. It was also learned that the firm contemplates bringing its wood pulp and other raw materials for the Carlisle industries from Northern European points through the St. Lawrence River after crossing the ocean without breaking bulk.

Self Insurance for Carlisle Mills

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., August 5, 1929.—Representatives of the various paper and power corporations affiliated with the Carlisle organization met during the past week at the Black River Valley Club to complete details for the new self insurance plan, under the compensation law, which will become effective in the near future. P. J. Rooney, formerly with the Utica Mutual Insurance Company, has been placed in charge of the self insurance plan and his offices will be located in Watertown. The new form covers protection for employees of the St. Regis Paper Company and all branches of the Carlisle interests. E. L. Dona has been appointed adjuster. Among those attending the meeting were John N. Carlisle, H. G. Davis, Samuel Abbey, Peter Young, L. B. Fassett, and W. T. Rooney.

Mead Pulp & Paper Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 5, 1929.—Several millions of dollars are represented in the investment made by the Mead Pulp and Paper Company of this city and Chillicothe in the plant it operates in that latter city, which is located in Ross county, Ohio.

The company is installing two of the largest paper machines of their particular type that have ever been built. The extension is necessitated by increased demand for the company's product, particularly from the Crowell Publishing Company of Springfield, and the McCall Publishing Company in this city.

The McCall Company, which publishes *McCall's Magazine* in Dayton, recently acquired the *Red Book* and the *Blue Book* magazines which also will be published in Dayton, adding greatly to this city's prestige as a publishing center.

The Mead Company has just closed its Peerless Paper plant, a four-story concrete structure, located at Idylwild avenue and Webster street and has removed the machinery from that building to the Chillicothe mills. This is proving to be an important step in the matter of concentrating production in Chillicothe and marks the second removal from Dayton by the Mead Company, the original plant having been transferred from Front street, Dayton, a number of years ago to the Chillicothe mills.

The Front street buildings were taken over by the Mercantile Corporation when it obtained the Government contract for stamped envelopes and newspaper wrappers, acquired some time ago by the International Envelope Company, understood to be a subsidiary of the International Paper Company, which occupies the same old quarters.

The Peerless Paper mill, a division of the Mead Pulp and Paper Company, was a prosperous going concern. The building, formerly owned by the late Morris Costello, paper manufacturer and for many years previously a member of the firm of Nixon & Costello, bottle wrapper manufacturers, has now been leased by the Mead Pulp and Paper Company to the General Motors Corporation of this city and it will be used by that concern in its non-productive department, thus making possible an extension of its productive departments in the Moraine City plants, just south of Dayton, for the benefit of the Frigidaire Corporation, a subsidiary.

The Peerless mills was purchased by the Peerless Paper Company from Costello and associates in October, 1913. In 1924, the structure was leased to the Mead Pulp & Paper Company for a period of 15 years, at a total rental of $1,890,000.

This lease, presumably the one taken over by the General Motors Corporation, has until 1939 to run, according to the Mead lease, rental of $10,500 a month will have to be paid.

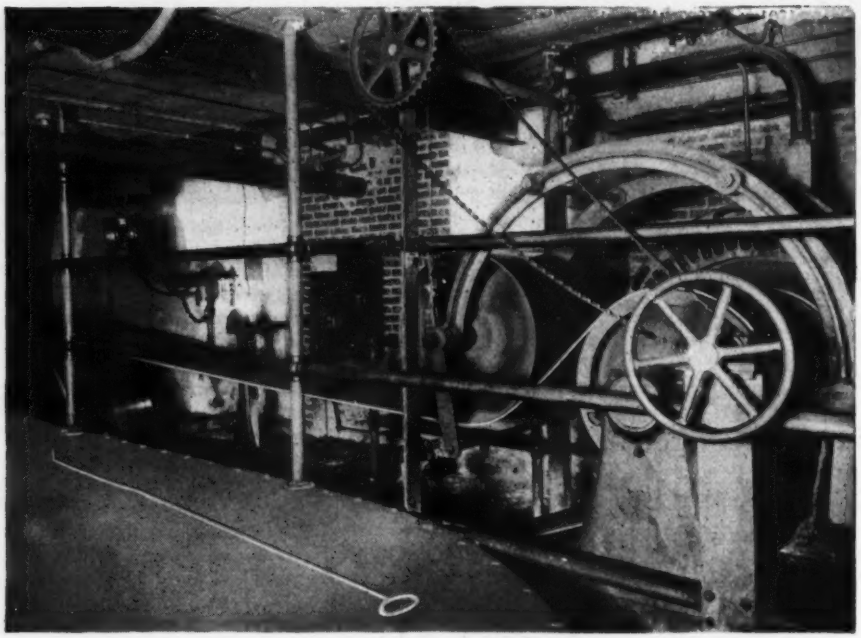
It so happens that the Peerless mills are in the same general locality of other General Motors factory buildings in the central manufacturing district of the city, and that it fits in well with the group in the vicinity of Taylor street. The Peerless mills are of irregular shape, fronting 333 feet on Webster street, 301 feet on Idylwild avenue, 301 feet on Amelia street and being only 222 feet wide in the rear.

Naturally, with the increase in the value of manufacturing properties since it was purchased from Costello and associates in 1913, the year of the Dayton flood, the Peerless mills have arisen most substantially in value. Just to what extent the mills will figure in the future of the General Motors enterprises cannot be stated at this time. The Frigidaire plant has been rushed to the limit, the producing having gone above the million mark and each month has witnessed a breaking of previous records in sales not only in the United States but in foreign countries.

It is reported that as the company does not operate a box factory of its own, a plant of this type may be installed.

Paper Production Index Higher

WASHINGTON, D. C., August 7, 1929.—June production index for the paper trade is given at 126 compared with 126 for May and 118 for June of last year taking 1923-1925 at 100 according to the Department of Commerce.



Shartle Breaker Beater (72" x 7") at the Manayunk, Pa., plant of the Container Corporation of America. Pulleys 24" and 32" in diameter; Motor 250 H. P., Belt Speed 2100 F. P. M., Output 80 tons per 24 hours. This 24" 9-ply Highflex belt has been in service on this drive four years.

Highflex belting functions better on troublesome paper mill drives

HIGHFLEX is a good belt for every drive in a paper mill. It is equal to the heaviest back-breaking drives and does equally well on the small pulley high-speed drive. One brand of belting in stock, equal to every emergency, simplifies the inventory and insures against misapplication. Highflex is the one brand of belt on the market that is recommended for 95% of transmission drives.

Highflex belts have a higher power capacity, and last longer. Highflex belting, now running on thousands of paper mill drives, is breaking all records for length of service before shortening becomes necessary.

The Highflex belt is a particularly satisfactory solution for the troublesome beater drive because of its non-stretching carcass, superior pulley contact, firm grip on fasteners. It performs the job with a wide margin of safety and insures against costly shut-downs.

Highflex is also an outstanding success on sectional cone drives, where its resistance to stretch is appreciated by superintendents who want to guard against shut-downs. The square edges of Highflex belting, because foldless, present a better wearing surface against shifters.

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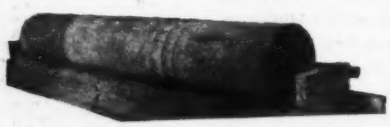

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

Causes and Prevention of Deterioration in Book Materials*

Compiled by Robert P. Walton[1]

One of the chief responsibilities of libraries and similar institutions is the preservation of the literature with which they have been entrusted. As indicated in the following compendium, all our present literature is confronted with the possibility of complete extinction within a spectacularly short period. The purpose of this compilation is to emphasize further the seriousness of the situation and to present a readily accessible account of those efforts which have been directed toward the attempt to check the extensive forces of disintegration now at work.

Sources of Information

The sources of such information—paper and leather periodicals principally—are such that it is particularly difficult to attain even approximate completeness in any compendium such as this. Nevertheless, it is felt that the most important conclusions and trends of investigation are summarized here. With respect to the paper section, a number of additional references can be found in the exhaustive bibliography of paper materials recently published by C. J. West in conjunction with the Technical Association of the Pulp and Paper Industry (Bibliography of Paper Making, 1900-1928).

Order of Arrangement

The order of arrangement here has been chronological. In giving descriptive summaries, it has been found convenient in some cases to incorporate abstracts which have been published previously in other journals; in such instances, reference has been made to the journal from which the abstract was taken. Mr. Daniel C. Haskell, Mr. E. P. Schulze and Mr. L. H. Fox have kindly assisted in the collection of this material.

PLINIUS SECUNDUS, GAIUS. Naturalis historia. Book 13, chapter 27. About 60 A. D.

Quoting from a work by Cassius Hemina, Pliny states that Hemina broke into a grave and found books of paper (*papyrus*) in a good state of preservation. According to the account, the period of interment had been 535 years and the remarkable preservation of the paper was attributed to the presence of citrus leaves, whose bitterness prevented the attack of worms and such.

MARTENS, A. Ueber Druckpapiere der Gegenwart. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, Ergänzungsheft 4, 1887, and Jahrg. 6, 1888, p. 126-129.)

Tests indicate that a great part of the works of this period are in imminent danger of extinction because of the rapid disintegration of the paper on which they are printed.

JOHNSON, ROSSITER. Inferior paper a meance to the permanency of literature. (Library journal, New York, 1891, v. 16, p. 241-242.) **HA*

Speaks of certain volumes published in 1836 entirely from cotton and which were yet in perfect condition. Other volumes published only a few years previously from wood pulp paper were in a grievous state of deterioration. Remarks "centuries hence some bibliographer will construct an ingenious theory and to explain why no books were printed between 1870 and 19—, the date at which we accomplish the destruction of the forests and begin again on cotton."

In a note states that Justin Winsor tried in vain to induce editors of leading Boston dailies to publish a few copies of each issue on good paper.

Reprinted from the *New York World*.

HERZBERG, W. Die Ausdauerfähigkeit unserer Papiere. (Die Chemische Industrie, Leipzig, 1895, Jahrg. 18, p. 476-479.) *3—VOA*

Because paper made in former ages from rags only has proved highly durable and been found in good condition even centuries after manufacture, it is frequently assumed that production from pure rag-pulp is still at the present day an essential and sufficient condition to ensure an equal degree of permanence. This conclusion the author considers to be too far reaching, since the manufacturing process now used differs widely from that formerly in vogue. The preliminary treatment of the rags by boiling with lime, soda, etc., is probably an improvement—resulting in less injury to the fiber—on the old putrefaction process. The modern bleaching process with chloride of lime is, however, a more serious factor. Undoubtedly, at this stage, the fiber is more or less attacked, although there is no reason to suppose that its resisting power is seriously impaired. The danger lies rather in the incomplete removal, from the pulp, of decomposition products—especially calcium chloride. The latter in contact with alum (added during sizing) would give rise to aluminum chloride—a substance which readily gives off free hydrochloric acid, and therefore, must exert a destructive action on cellulose. Again, when "antichlor" (sodium thiosulphate, etc.) is used to destroy excess of bleach, free sulphur is always deposited on the fiber, and this will in the course of time exert an injurious effect. Another possible source of weakness is the substitution of rosin for animal sizing. Mineral loading and staining materials may in general be regarded as inert bodies, having no action on cellulose. Some varieties of ultramarine, however, are apt to liberate free sulphur after a time.

As regards the durability of papers produced, wholly or partially, from wood-cellulose, esparto, etc., opinions are still divided, some holding that these rag substitutes should never be used for paper that is intended to remain sound for long periods, and vice versa. In the case of unbleached cellulose and ground wood no doubt exists; these materials are known to deteriorate rapidly.

The author concludes, therefore, that this question of durability can only be definitely decided by series of systematic experiments extending over a long period of time.

Abstract in *Jour. Soc. Chem. Ind.*, 1896, v. 15, p. 290.

BLADES, WILLIAM. The enemies of books. Chicago: A. C. McClurg & Co. [1896?] 151 p. illus. 12°. **IIHL*

A rather non-technical treatment describing variously inclined individuals as negative influences in the preservation of literature. Certain religious fanatics, collectors, "biblioclasts" and "bibliomaniacs" are heavily scored. The destruction of the Alevandrian library and lesser instances of vandalism are referred to in an interesting fashion. Observations of pseudo-scientific importance are contributed in the chapters on bookworms and other vermin.

There are several editions of this book and a French translation.

CROSS, C. F. The industrial uses of cellulose. (Royal Society of Arts, Journal, London, 1897, v. 45, p. 684-696.) *VA*

Discusses resistance and durability of various paper-making materials. "Papers from mechanical wood pulp are rapidly attacked by atmospheric oxygen, undergoing a veritable combustion, the oxidation being attended by discoloration and disintegration."

* A 39 page booklet published by the New York Public Library dealing with the materials going into book manufacture. Only the section dealing with paper is shown herewith. A copy may be obtained from the library on request.

[1] New York Public Library, Science and Technology Division.

EAMES, WILBERFORCE. Care of newspapers. (Library journal, New York, 1897, v. 22, no. 10, p. 50-51.) *HA

Devoted chiefly to methods of binding old newspapers at the Lenox branch of The New York Public Library. Each leaf is mounted on guards and each number interleaved with a sheet of stiff paper. The stiff paper between each number is half an inch larger all the way around than the newspaper it protects so that in turning over the leaves it is not necessary to touch the newspaper at all.

CONFERENCE of Italian librarians. (Library journal, New York, 1898, v. 23, p. 667.) *HA

At a session of Italian librarians at which the deterioration of paper was discussed, it was resolved to ask the government to control the standard of paper for government publications and for a given number of books, reviews, and newspapers for the government libraries.

EVANS, J., CHAIRMAN. Report of the committee on the deterioration of paper. (Society of Arts, Journal, London, 1898, v. 46, p. 597-601.) VA

The main purpose of the work of the committee has been to ascertain the validity of the supposition that the fibrous raw materials—esparto, "mechanical wood" or ground wood pulp, wood celluloses, etc.—more recently introduced are inferior, with regard to the relative permanence of the paper made from them, to the older celluloses obtained from cotton, flax, and hemp. The physical qualities of paper may be expressed under the following three heads:

Strength, measured in terms of the weight or strain which it will support.

Elasticity and Texture, measured by elongation under strain and resistance to rubbing.

Bulk, expressed in the precise terms of specific gravity or weight per unit of volume.

There must also be taken into account the properties belonging to the paper as a chemical substance (or mixture), *i.e.*, its actual composition, and the liability to change under whatever conditions of storage or use to which it may be subjected. The committee feels convinced that these physical and chemical constants must come more and more into practical consideration, and ultimately regulate the consumption and, therefore, production of papers.

With regard to the deterioration of papers, the Committee have come to the following conclusions:—The tendencies to deterioration of papers are marked (1) by disintegration, (2) by discoloration. These are independent effects, but may be concurrent, and indeed are notably so in paper containing mechanical wood pulp.

1. *Disintegration.*—Actual disintegration has been found to occur in all grades of paper; it is the result of chemical change of the fibers themselves, and in some cases could be traced to the effect of illuminating gas upon the atmosphere of the rooms in which the books had been stored. In the case of the rag papers examined, the effects appeared to be due to acid bodies, which may have been present in the original paper as made, may have resulted from reactions going on in the paper itself after making, or may have been due to products of gas consumption. With papers made from mechanical wood pulp, disintegration is due to oxidation, and is accompanied by an alkaline reaction of the paper.

Discoloration is also stated to affect all papers to a certain degree, in some cases a uniform discoloration taking place, whilst in others the more marked effect of a darkening of color spreading inwards from the margins, occurs. The former is the result of changes in the paper itself, whilst the latter is caused by external means, such as the action of an atmosphere charged with the products of combustion of coal gas. As a general conclusion, it is stated that discoloration of ordinary cellulose papers (as distinguished from those containing mechanical wood pulp), under usual conditions of storage, is proportional to the amount of rosin which they contain, or more generally to the rosin and the conditions employed for fixing it in the ordinary process of engine-sizing. With regard to paper likely to be used in chemical laboratories, etc., it should be noted that mechanical wood pulp is stained a deep yellow, and esparto and straw celluloses, pink, by aniline and other coal-tar bases.

The following hints are given in connection with the preparation of printing papers:

Sizing (engine-sizing).—Whenever possible, book paper should be sized with a minimum quantity of rosin. Two per cent (calculated dry) is suggested as a maximum, and it is stated that the quality of "hard-sizing," usually produced with large proportions of rosin, is superfluous for nearly all the ordinary uses of printing paper. The presence of starch is objectionable, though its employment may be necessary in the case of heavily-loaded papers.

Acidity.—A slightly acid reaction (acid to litmus, neutral to methyl orange) should be given to the paper by finishing with the normal slight excess of alum.

Chlorides.—The paper should contain a minimum quantity of chlorides.

Color.—It is stated that in ordinary practice the question of the permanence of the color of the paper when made is not much considered. The committee suggest that when very white printing papers are required, the sizing should be reduced to the practical minimum; and also that for ordinary printing papers a lower standard of color might be adopted.

Loading.—It is concluded that 10 per cent of total mineral constituents is the extreme limit for papers for publications of permanent value.

Abstract in *Jour. Soc. Chem. Ind.*, 1898, v. 17, p. 595.

O'CONOR, JOHN FRANCIS XAVIER. Facts about bookworms. New York: Francis P. Harper, 1898. 87 p. 12°. *HHL

Has examined seventy-two specimens of various kinds of insects of such a character as to be classified under the general name of bookworms.

Procès verbal de la Conférence internationale pour la conservation et la restauration des anciens manuscrits tenue à Saint-Gall. (Revue des bibliothèques, Paris, 1898, année 8, p. 415-425.) *HA

DAUZE, PIERRE. La question de la conservation du papier dans les bibliothèques publiques et privées et un moyen de la résoudre. (Congrès international des bibliothécaires, Paris, 1900, Procès-verbaux et mémoires, p. 227-231.) *HA

States that the conservation of paper has become highly problematic or even impossible since the displacement of rag paper. The composition of paper first began to be modified about 1830. After some 30 years the unhappy consequences of this innovation began to put in their appearance. In order to avert the accelerated disappearance of modern literature, suggests that the government and libraries refuse to purchase works other than those printed on paper conforming to official specifications.

HIRIART, LÉON. Note sur les insectes qui ravagent les bibliothéques. (Congrès international des bibliothécaires, Paris, 1900, Procès-verbaux et mémoires, p. 135-138.) *HA

Les INSECTES qui s'attaquent aux livres et les meilleurs moyens à employer pour leur destruction. (Congrès international des bibliothécaires, Paris, 1900, Procès-verbaux et mémoires, p. 44-45, 259-263.) *HA

A prize of 1,000 francs is posted for the best memoir presented on the subject of the above title. A prize of 500 francs is posted for the second best memoir. The regard is designated the "Prix Marie Pellechet" after its donor.

L'ÉTUDE et la destruction des insectes ennemis des livres, mais spécialement de ceux qui attaquent les reliures. (Congrès international des bibliothécaires, Paris, 1900, Procès-verbaux et mémoires, p. 45, 260-263.) *HA

An anonymous prize of 1,000 francs is posted for the best memoir presented on this subject.

YVE-PLESSIS, ROBERT. Petit essai de biblio-thérapeutique; ou, L'art de soigner et restaurer les livres vieux ou malades. Paris: H. Daragon, 1900. 95 p. 12°. *HHL

KLEMM, PAUL. Ueber die Farbebestaendigkeit der Papiere. (Klimsch's Jahrbuch, Frankfurt a. M., 1901, Bd. 2, p. 32-36.) 3—MDSA

A general discussion. States that pure cellulose would last indefinitely without discoloration. The manufacture of a paper from pure cellulose, however, is entirely impossible. Papers containing wood pulp are generally recognized as having a strong tendency to turn yellow or even brown. The yellow discoloration, however, is not confined to such papers; wood-free papers are also susceptible to discoloration when sized with rosin. This is attributed to the presence of light sensitive soaps which are contained in the paper. The soaps consist of iron in combination with organic acids of the rosin. The iron is present as an adventitious impurity introduced with the alum used to precipitate the size.

DURABILITY of paper. (Paper trade journal, New York, 1902, v. 35, no. 16, p. 504; no. 17, p. 536, 538; no. 18, p. 566.) †VMA

KLEMM, PAUL. Vergilben holzfreier Papiere. (Papier-Zeitung, Berlin, 1902, Jahrg. 27, p. 961-963.) 3—†VMA

Qualitative tests of the yellow discolorations indicate that the product is an iron-rosin soap. The intensity of discoloration is generally proportional to the iron content. A method is given for the determination of iron combined in soap form.

DISCOLORATION of paper. (Paper trade journal, New York, 1903, v. 36, no. 8, p. 244.) †VMA

HOULBERT, C. Les insectes, ennemis des livres; leurs moeurs. Moyens de les détruire. Paris: Alphonse Picard & fils, 1903. xxxviii, 269 p. illus. 8°. *HHL

A response to the conditions of the "Prix Marie Pellechet" and recipient of the second prize of 500 francs. Contains an annotated bibliography of 94 references which constitutes an excellent survey of the previous efforts along this line. States that the first rational description concerning insects which injure books was presented by Frisch in 1724. There have been two prizes offered previously for the best solution of this problem; these were posted in 1774 in Göttingen and in 1842 in Mons. The author proceeds here to give a detailed classification and description of those insects which damage books. Considers carbon disulphide to be the most efficacious agent for the destruction of these insects. Besides the rapid deterioration of wood pulp paper, considers that certain insects are a factor. Mixing toxic substances with the pulp or with the sizing will prevent the attack of insects but is likely to cause an even more rapid deterioration because of chemical corrosion. A number of insects preferentially attack the paste used in binding. Recommends that substances such as mercuric chloride, arsenious acid and borax be intermixed with the adhesive. Flour from horse chestnuts, by reason of its bitterness, can be mixed to advantage with the starch paste.

LITTLE, ARTHUR DEHON. The durability of paper. (Printing art, Cambridge, 1903, v. 1, no. 4, p. 115-118.) ††*IPA

Reprinted by Little and Walker, Boston, 1903, †*VBA p.v.10, no.19*.

Emphasizes the distinction between ground-wood papers and wood-fiber papers. The latter, when made from properly purified wood fibers as bleach sulphite and soda fiber, is of much greater permanence than the former. "In a ground-wood paper ultimate disintegration is certain, whereas in pure fibers the change should only come through inadvertance. . . . The unregulated use of bleaching agents is probably responsible for the destruction of more high grade paper than any other cause. In selecting a paper for durability one should therefore avoid papers which are brilliantly white unless he can assure himself that the fiber substance has in no way suffered, and that all traces of the chemicals used in bleaching have been removed." A general specification is given for a durable paper.

HERZBERG, W. Dauerversuche mit Papieren von verschiedener Stoffzusammensetzung und Herstellungsweise. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1904, Jahrg. 22, p. 243-250.) 3—VEA (*Prussia*)

About a thousand papers are to be stored and tested after a definite interval of time.

KORSCHILGEN, J. P. Dauerhaftigkeit Papiere und ihre Prüfung. (Papier-Zeitung, Berlin, 1905, Jahrg. 30, p. 2570-2572, 2722-2723.) 3—†VMA

Paper for permanent records and hard wear should only be made from strong, sound rags; old and tender rags give a paper which deteriorates rapidly by use. The nature of the sizing is probably of little importance, provided it has been properly incorporated. The tensile strength is of importance from the point of view of durability, owing to the fact that the strongest papers are generally those made from long and sound fibers, and include those papers of which the fibers are beaten wholly or partly to fine fibrillæ which interlace well and the presence of which is the best guarantee of long-wearing qualities. The tensile strength is greater in the machine way than in the cross way, whereas the breaking stretch is greater in the cross way owing mainly to the

lengitudinal tension under which the paper is dried. Consequently a book of which the paper is folded in the cross way will be less durable than one in which the binding folds are parallel to the machine way. The author argues strongly against the custom of judging a paper by the mean tensile properties of the two directions; for durability, it is only the weakest direction which counts, and the specifications should state minimum values for breaking length and stretch. Rag papers are easily made with a ratio of 66 per cent between the weakest and the strongest directions; the best rag papers properly beaten will even show ratios of 85-90 per cent. Short-fibered papers from straw, esparto and deciduous wood cellulose are easily made with a ratio of 60-65 per cent, but papers composed of coniferous wood cellulose generally show a ratio of only 40-50 per cent between the two directions. In such cases the mean strength gives a very false idea of the real strength. The most important mechanical test for durability is the loss of tensile strength and elasticity produced by folding the paper backwards and forwards a given number of times (say, five double creases) under standard conditions in the Schopper creasing machine. A paper containing a high proportion of gelatinized cellulose [wet beaten] generally possesses extremely high tensile qualities, but it may be very brittle and of low durability, in which case it will be immediately condemned under the folding test. By means of the folding test also the presence of weak or old rag fibers, deficient beating, bad felting, over-drying and hydrocellulose are detected. Wood celluloses and other rag substitutes show up badly under this test. The author suggests that, if lignified fibers be excluded, the specifications of the German "normal" papers can be made efficient measures of durability without making any reference to the fibrous composition. A kind of natural selection in these respects will be made by specifying a minimum breaking length and stretch together with a maximum loss of these values after the folding test. For instance, "normal" papers of the first class should have a minimum breaking length of 5,000 m., minimum breaking stretch of 3.5 per cent, and a maximum decrease in these values after five double creases of 20 per cent.—*J. F. B.*

Abstract in *Jour. Soc. Chem. Ind.*, 1905, v. 24, p. 983.

POMORTZEFF, M. Procédé de traitement des étoffes, draps, papiers et autres substances en vue d'en assurer la solidité et l'imperméabilité. (1905, French patent no. 356,497.)

See also English patent 15518 (1905).

Absract in *Jour. Soc. Chem. Ind.*, 1903, v. 25, p. 16, 425.

HERZBERG, W. Dauerversuche mit Papieren von verschiedener Stoffzusammensetzung. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1907, Jahrg. 25, p. 82-99.) 3—*VEA* (*Prussia*)

The Materialprüfungsamt has undertaken experiments to test the durability of papers by storing samples and testing them at long intervals. In the present report the results are given of strength and elongation tests on 162 papers of class 1 (all rag without fillers), 224 of class 2 (rag with not over 25 per cent other pulps and not over 25 per cent ash), and 255 of class 3 (any pulp except lignified fiber, and not over 15 per cent ash). These papers had been lying open to the air and to a little light for 12 years. There is no very marked difference seen in the deterioration of the three classs of paper, although class 1 shows a greater percentage that have decreases in strength and a smaller percentage that have decreases in elongation, than classes 2 and 3. The variations in the tests are too great, however, for any more detailed conclusions to be drawn at this time regarding the relative durability of these three classes.

Also in *Papier-Zeitung*, 1907, Jahrg. 32, p. 2350-2352; *Wochenblatt fur Papierfabrikation*, 1907, Jahrg. 38, p. 1882-1885.

Abstract in *Chem. abst.*, 1907, v 1, p. 2491.

Die Zukunft unserer Druckwerke. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1907, Jahrg. 25, p. 116-119.) 3—*VEA* (*Prussia*)

Martens called attention 20 years ago to the uncertain future of the paper in modern use for many books and periodicals. At that time it was found that out of 100 periodicals of permanent value, only 6 were printed on paper which was likely to last for many years. To obtain more data on this subject the Materialprüfundsamt is now testing samples from about 400 books and periodicals furnished by the Library of the University of Berlin. One instance is given of a work published in 1881, which is now falling to pieces. The properties of the paper were mean breaking-length 1550 m., elongation 1.8 per cent, folding-class O (one double-fold), resistance to crumpling extremely low. The fiber composition was linen 40, cotton 30, wood-pulp 25, straw-pulp 5. The ash was 21 per cent. This example shows clearly that the fiber-composition is not the only important consideration, for this paper was 70 per cent rag, and contained no lignified fiber. The physical tests are just as important as the composition, because the best of fiber can be so handled as to make the poorest of paper. In the present case an additional outlay of 2½ cents on a volume selling for $2.50, would have permitted the use of paper of class 8a which would probably last for centuries.

Also in *Papier-Zeitung*, 1907, Jahrg. 32, p. 3067; *Wochenblatt fur Papierfabrikation*, 1907, Jahrg. 38, p. 1986-1988.

Abstract in *Chem. abst.*, 1907, v. 1, p. 2634.

HERZBERG, W. Zerstörung der Leimfestigkeit von Papier durch Bedrucken. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1907, Jahrg. 25, p. 154-155.) 3—*VEA* (*Prussia*)

Another case of the effect of printing ink upon sizing has been observed, similar to the envelope paper reported on previously. A book paper, originally well sized, was printed with red, blue, and black lines. When tested as usual, by the drawing across the paper of heavy writing-ink lines, the ink spread and ran through wherever the writing ink crossed a printed line, probably on account of the destruction of the sizing caused by the varnish of the printing ink.

Also in *Papier-Zeitung*, 1907, Jahrg. 32, p. 3067; *Wochenblatt fur Papierfabrikation*, 1907, Jahrg. 38, p. 2862.

Abstract in Chem. abst., 1907, v. 1, p. 3057.

Füllstoffe und die Dauerhaftigkeit des Papiers. (Papier-Zeitung, Berlin, 1907, Jahrg. 32, p. 2113-2114.) 3—† *VMA*

The requirements as to the content of ash in "normal papers," as laid down by the German government in 1886, were dropped from the specifications of 1904. In discussing the justice of this change, the author states that there is no reason why a paper containing mineral fillers should deteriorate any faster than one without fillers, if it have initially the same physical properties. Durability depends more upon the conditions to which the paper is subjected than upon its composition. The high strength tests required of the better classes of normal papers have, up to the present, prevented fillers from being used much in excess of the old ash requirements; but if more mineral fillers can be used and the tests still met, it should be regarded as a step forward rather than backward.

Abstract in *Chem. abst.*, 1907, v. 1, p. 2490.

FRANKE, JOHANNES. Eine ernste Gefahr für unsere Bibliotheken. (Zentralblatt für Bibliothekswesen, Leipzig, 1908, Jahrg. 25, p. 193-206.) * *HA*

Discusses work of the Materialprüfungsamt and the committee of the Society of Arts, as well as of other investigators, in regard to the deterioration of paper.

Also in Königliches Materialprüfungsamt, *Mitteilungen*, Berlin, 1908, Jahrg. 26, p. 137-146.

HERZBERG, W. Schutz unseren Geistesdenkmälern. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1908, Jahrg. 26, p. 105-137.) 3—*VEA* (*Prussia*)

The author has examined 435 samples of paper supplied by the Berlin University Library and taken chiefly from treatises and periodicals devoted to the arts and sciences. Such books partake of the nature of permanent records of importance, and it might be expected that, in comparison with the cost of the book, the small difference between the cost of a good paper and a bad paper would not be considered. The standard paper considered satisfactory for publications of this importance is that specified in the list of Prussian "normal" papers as "class 8a," a pure rag paper, with mechanical properties corresponding with the "strength-class 4"; for works of subordinate importance, paper of "class 8b," composed of any non-lignified fibers, but of the same strength-class, would be admissible. The work of the author has been to ascertain what proportion of the papers in actual use conform with these standards, and thus have a reasonable prospect of surviving for any length of time under the conditions of use in a reference library. Considering first the fiber composition of the papers, and excluding books printed before the second half of the 19th century, the author has been able to compare the results with those of a similar investigation made 20 years ago by A. Martens. The figures are given in the following table:

Year	No. of samples tested	Percentage of samples belonging to Fiber-Class. I.	III.	IV.
1887.....	123	2	33	60
1907.....	419	9	70	21

Class I. = pure rag; Class III. = any non-lignified fibers; Class IV. = any fibers whatever, including mechanical wood fibers.

Thus there has been a distinct improvement in the direction of excluding the extremely perishable mechanical wood fiber from valuable publications. But the author's tests of the mechanical properties, which could only be made in full on 246 samples, showed an extremely unsatisfactory state of things. Only 1.6 per cent of the papers tested, fulfilled all the specifications of "strength-class 4." About one-third of the samples showed a sufficiently high breaking-length or breaking-stretch, but only 18 per cent were up to the standard in both respects. The quality of resistance to repeated creasing showed the worst results, only 1.8 per cent of the samples reaching the standard specified for class 4. Yet this quality is probably one of the most important factors in the durability of a paper when used in the form of a book. The author states most emphatically that a specification based on composition alone is not sufficient to ensure a durable book paper, in fact some of the worst examples cited refer to papers composed mainly or entirely of rag fibers. The quality of the raw material and its suitable treatment in the process of manufacture are really of more importance. These can only be ensured by a strength specification. The author asks for a commission representing the various interests, with a view to legislation, making it compulsory that all copies of printed matter deposited in or purchased by the public libraries should be printed on papers of the "normal" class 8a or class 8b. In the case of treatises, valuable books, etc., class 8a, a pure rag paper, should be used; in the case of periodical literature a general regulation for the use of rag papers would cause too heavy a demand, and paper of class 8b would be permissible. If necessary special "library copies" would have to be printed to conform with these regulations.

Abstract in *Jour. Soc. Chem. Ind.*, 1908, v. 27, p. 639.

Also in *Papier-Zeitung*, 1908, Jahrg. 45, p. 1763.

KIRCHNER. Durability of paper. (Paper trade journal, New York, 1908, v. 47, no. 10, p. 56.) † *VMA*

VEITCH, FLETCHER PEARRE. Suitable paper for permanent records. (United States.—Department of Agriculture, Yearbook 1908, Washington, p. 261-266.) *VPZ*

"The result of the various operations of paper making is a compromise. The operations which make clean, white paper make it weak and subject to slow changes which lead ultimately to its destruction. Those which make a strong paper do not give as clean a sheet and at the same time increase its transparency greatly. The processes which make the paper more opaque make it weaker, and those which give good clear printing or writing qualities hasten its destruction. . . . When the buyer attaches more importance to quality than to appearance, all paper will be better." States that in the manufacturing process, insufficient cooking may produce a paper which will probably be strong when first made, but will not prove durable because of the impurities which were unaffected by cooking and which it still contains. Overcooking, on the other hand, also weakens the fibers. Oxidizing agents used in bleaching have a very marked positive effect on deterioration. All chemicals added during the process should be thoroughly washed out of the pulp before it is made into paper. The slower the drying process the more durable the paper.

BARTSCH, C. Die Bücherdesinfektion mittels feuchter heisser Luft und deren Einwirkung auf die Festigkeit von Papier. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1909, Jahrg. 27, p. 138-143.) 3—*VEA* (*Prussia*)

CHIVERS, CEDRIC. The paper and binding of lending library books. (American Library Association, Bulletin, Chicago, 1909, v. 3, p. 231-259.) * *HA*

A study of the chemical and fibrous composition gave no significant conclusions as regards durability of the books. The physical condition of the paper is of more decisive importance. "The most injurious treatment in recent years to which paper has been subjected is that of overstitting and beating its pulp, and so impregnating it with air as to form the feather-weight papers, which are among the worst with which we have to deal." Excellent photomicrographs of surface and transverse sections of various papers are

given. It is considered important that books should be bound with the grain across the page. When a book is made with the grain of the paper down the page and the paper is folded and pierced for sewing a lack of tensile strength ensues, amounting to 75 per cent.

Abstract in *Chem. abst.*, 1910, v. 4, p. 667.
Also in *World's paper trade review*, London, v. 52, p. 1011.

WILEY, HARVEY WASHINGTON, AND C. H. MERRIAM. Durability and economy in papers for permanent records. A report submitted by H. W. Wiley, and C. Hart Merriam, including paper specifications, by F. P. Veitch. Washington, 1909. 51 p. illus. 8°. (United States.—Department of Agriculture. Report no. 89.) *VPZ*

"A small edition of each publication, or certainly of those of scientific value, should be printed on high-grade paper for distribution as permanent records to public and institution libraries. This paper should consist of at least 75 per cent rag stock, should be strong and thoroughly well made to withstand much handling. . . . Low quality rags or severely treated rags may yield a weaker or less durable paper than is produced from materials which in the original state are inferior." Factors in the manufacturing process which cause deterioration are undercooking, overcooking, rapid drying at hot temperatures, and excess of rosin size. "The addition of loading materials is detrimental to the strength and durability of paper." Methods of testing and specifications are given in extensive detail. These specifications are by F. P. Veitch, Chief of the Leather and Paper Laboratory.

EDLUND, T. Schwefelsäure im Papiere. (Papier-fabrikant, Berlin, 1910, Jahrg. 8, p. 765-766.)

Abstract in *Jour. Soc. Chem. Ind.*, v. 29, p. 1053.

HILL, FRANK PIERCE. The deterioration of newspaper paper. (American Library Association, Bulletin, Chicago, 1910, v. 4, p. 675-678.) **HA*

According to the author's experience many of the papers published within the last 40 years had begun to discolor and crumble to such an extent that it would hardly pay to bind those which had been folded for any length of time. Practically all of these newspapers had been printed on cheap wood-pulp paper. . . . Something of the history of wood-pulp paper is quoted from Albrecht Pagenstecher, whose father introduced the process in America. A letter to Mr. Pagenstecher by Prof. Herzberg of the University of Berlin is also quoted. In this a method is given for restoring old and brittle papers. The method is to dip the sheets one by one into a cellite solution and then hang them up to dry or spread on large meshed nets. It is claimed that this method does not damage the paper body and makes it possible to preserve newspapers for a long time.

Also in *Library journal*, New York, 1910, v. 35, p. 299-301.

MARTENS, A. Festigung morscher Papiere oder Pergamente durch Behandlung mit Cellitlösung. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1911, Jahrg. 29, p. 57-60.)

3—*VEA* (*Prussia*)

A collodion preparation called "zapon" varnish has previously been recommended for the preservation of decayed documents, but it is not quite unobjectionable on account of its inflammability and liability to chemical changes and discoloration. The author now advocates the use of "cellit" varnish which is claimed to be free from the objections recognized in the case of "zapon." "Cellit" varnish is a solution of a particular modification of cellulose acetate in a mixture of alcohol, ethyl acetate, ethyl acetoacetate and camphor. The suitability of this preparation for the above purpose has been called in question by Schluttig, who objects that the liquid and the film of varnish produced from it have a reddish color and a distinctly acid reaction, that a portion of the solvent is not readily volatile and the varnish dries very slowly, lastly that it is not suitable for treating photographs. The author replies to these contentions, stating that the red coloration was due to the use of iron vessels and that the preparation is colorless if stored in glass or stoneware, that the acidity can only amount to traces left in the ethyl acetoacetate and cannot injuriously affect the documents, and that the varnish is not intended to be used for the treatment of photographs on collodion-coated papers.

Abstract in *Jour. Soc. Chem. Ind.*, 1911, v. 30, p. 414.

REINICK, W. R. Insects destructive to books. (American journal of pharmacy, Philadelphia, 1911, v. 83, p. 503-515.)

Portion on paper condensed in *Le Papier*, 1911, année 14, p. 197.

BEADLE, C., AND H. P. STEVENS. Destruction of paper in transit by insects. (World's paper trade review, London, 1912, v. 57, no. 21, p. 1050.)

PRESERVATION of newspapers. (American Library Association, Bulletin, 1912, v. 6, p. 116-118; discussion, p. 118-120.) **HA*

Report of an A. L. A. committee consisting of F. P. Hill, H. G. Wadlin and Cedric Chivers. Report covers different suggestions made to it during the year including "special editions" and use of "cellite" or "celestron" coatings. Certain experiences are quoted which indicate that paper is less subject to deterioration if it is bound immediately as received and not allowed first to remain for some time in contact with the light and air.

ROOS, J. O. Undersökningar öfver finpappers hallbarhet, med särskild hänsyn till Svenska statens normalpapper. (Svensk kemisk tidskrift, Stockholm, 1912, v. 24, p. 110-115.) *PKA*

One of the chief faults of the Swedish normal paper is the injurious influence of $Al_2(SO_4)_3$. Animal and rosin sizing have about the same degree of influence on the durability of paper.

Abstract in *Chem. abst.*, v. 6, p. 3516.

SCHOELLER, VIKTOR. Ueber Vergilben vn Papier. (Wochenblatt für Papierfabrikation, Biberach, 1912, Jahrg. 43, p. 3222-3225, 3408-3409, 3489-3491, 3673-3675, 3963-3965, 4148-4150, 4336-4338.)

"Papers containing mechanical wood pulp discolor very readily with age, and papers containing straw and esparto pulp are likewise subject to discoloration. Chemical wood pulp turns yellow to a less extent, while a paper made entirely from rag suffers slight discoloration. . . . Unsized, unbleached cotton or linen half-stuff shows no tendency to discolor. . . . The most important cause of the discoloration of paper is the rosin size. All rosin-sized papers turn yellow. . . . Rosin develops a darker color on standing due to polymerization or autoxidation, and it is to this fact that the discoloration of rosin-sized papers is chiefly due. By previous treatment of the rosin with bleaching powder, this polymerization may be accomplished and size made from rosin so treated has no effect on the discoloration of paper." See patent by Schoeller.

Dissertation, Munich, 1912.
Abstract in *Chem. abst.*, 1913, v. 7, p. 699.

Verfahren zur Fabrikation von nicht vergilben dem Papier. German patent no. 257,158 (1912).

The yellow color which develops in rag paper is attributed to the rosin size. To prevent this action the rosin is first submitted to the action of some oxidizing agent such as bleaching powder or permanganate.

BRIGGS, J. F. Rosin as a factor in paper discoloration. (Pulp and paper magazine of Canada, Gardenvale, Que., 1913, v. 11, no. 20, p. 686-687.) †*VMPA*

[BROOKLYN Daily Eagle plan.] (Library journal, New York, 1913, v. 38, p. 2.) **HA*

An editorial commending the plan whereby the Brooklyn paper offers to furnish to libraries a special edition for permanent preservation.

FROHBERG, ARNO. Festigkeitswerte verschiedener Zellulosen und deren Aenderung durch die Bleiche. (Wochenblatt für Papierfabrikation, Biberach, 1913, Jahrg. 44, p. 3599-3601.) †*VMPA*

Bleaching causes a high loss in folding strength. The tearing strength (lengthwise) is influenced to a less degree. Even a moderate amount of over-bleaching with bleaching powder causes a marked decrease in strength by virtue of the formation of oxycellulose.

NEWSPAPER preservation. (Library journal, New York, 1913, v. 38, p. 53.) **HA*

A short note announcing the reported intention of three newspapers, besides the Brooklyn *Daily Eagle*, to print "library editions" and the adverse comment of the New York *World*.

NORRIS, JOHN. Preservation of paper. (Library journal, New York, 1913, v. 38, p. 16-20.) **HA*

An article prepared by the chairman of the committee on paper of the American Newspaper Publishers Association, in response to a request from librarians for a better paper. Submitted to a commitete of the American Library Association, Nov. 26, 1912. A discussion of the methods by which improvement may be obtained, the composition of newspaper print, the complaint of librarians, United States Government specifications, Government commission report on special paper, the Library of Congress method for preserving old newspaper files, data relating to storage of newspaper files in public libraries and by commercial concerns.

Also in American Newspaper Publishers Association, *Bulletin 2795* ("B" special), p. 1133-1140, Nov. 10, 1912.

ZSCHOKKE, BRUNO. Untersuchungen über das Vergilben von Papieren. (Wochenblatt für Papierfabrikation, Biberach, 1913, Jahrg. 44, p. 2976-2981, 3165-3168.) †*VMPA*

These experiments were carried out independently of the recent work by Schoeller, but are nevertheless a direct confirmation of a number of these earlier findings. Apart from the presence of mechanical wood pulp, rosin size is the sole cause of discoloration. The color change is due to heat and light, while atmospheric oxidation is considered to have very little effect on the action. The results are in disagreement with Klemm as regards the direct relation of discoloration and iron content. The heating test is indicative of the tendency of the paper to discolor, but the test is not of even a roughly quantitative nature. Analytical determination of the rosin content of the paper is also a valuable indicative test and it may be safely assumed that a paper containing less than 1.0 per cent rosin will not discolor seriously with age.

Abstract in *Chem. abst.*, 1913, v. 7, p. 3661.

BARTSCH, C. Dauerversuche mit Pergament-, Pergamentersatz- und Pergamynpapieren. (Königliches Materialprüfungsamt, Mitteilungen, Berlin, 1914, Jahrg. 32, p. 510-518.)

3—*VEA* (*Prussia*)

CAUSE of paper turning yellow. (Paper trade journal, New York, 1914, v. 58, no. 18, p. 38.) †*VMA*

DURABILITY of high grade paper. (Paper trade journal, New York, 1914, v. 58, no. 19, p. 38.)

HAAS, B. Aus welchen Ursachen kann das Vergilben organischer Fasern oder der aus ihnen hergestellten Fabrikate abgeleitet werden? (Papierfabrikant, Berlin, 1914, Jahrg. 12, p. 891-894, 919-925.) †*VMPA*

"To prevent discoloration of paper, alum free from iron and bleached rosin should be used in sizing; there is some doubt as to the suitability of bleaching powder for bleaching rosin. Varying temperature and moisture content of the paper on the machine should be carefully avoided."

Abstract in *Chem. abst.*, 1914, v. 8, p. 3858.

LYDENBERG, HARRY MILLER. Preservation of modern newspaper files. (Library journal, New York, 1915, v. 40, p. 240-242.) **HA*

Paper read before meeting of teachers of journalism at Columbia. Mentions the use of certain compounds for treating paper. Such methods, however, were generally unsatisfactory for various reasons. It was considered necessary that some binding material be applied to the sheets which would exclude the air, would hold the files together, would be flexible enough to allow turning of the pages and transparent enough to allow the text to be easily read through the material. The use of chiffon or light thin silk and the use of Japanese tissue paper seemed to offer a possible solution of the problems. Sheets were

covered with these materials, using rice paste, and exposed to the sun for periods of 100 to 150 hours. Unprotected paper turned yellow and brittle very rapidly. Paper protected by the silk turned yellow less rapidly and paper protected by the Japanese tissue showed comparatively slight effect by the sun and remained encouragingly flexible. The use of Japanese tissue was further shown to be mechanically satisfactory. To bind an ordinary daily paper in this way would require $420 per year. Accordingly the method is too expensive for general use, although so far it seems to be the cheapest and most practical method yet devised.

NEWSPAPER files disintegrate soon. (New York Times, Sept. 3, 1917.) *A

An interview in which Director E. H. Anderson of The New York Public Library describes the method of preservation by Japanese tissue and emphasizes the necessity of thus preserving newspaper files.

SCARONE, ARTURO. El libro y sus enemigos. Montevideo: Imprenta y casa editorial "Renacimiento," 1917. 207 p. illus. 8°. *HHL

A study of the insects which invade libraries and museums.

SÉE, PIERRE. Sur les moisissures causant l'altération du papier. (Académie des sciences, Comptes rendus, Paris, 1917, tome 164, p. 230-232.) *EO

FRENCH, GEORGE. The present discontent with news print. (Paper, New York, July 24, 1918, no. 20, p. 15-16.) †VMPA

Proposes that a better quality paper be used when supplying libraries and other institutions wishing to preserve newspaper files.

HITCHINS, ALFRED B. The yellowing of paper. A study of the causes or principal factors producing the yellowing of paper. (Paper, New York, July 24, 1918, p. 11-15.) †VMPA

A large number of samples were subjected to the action of light, moist heat, and dry heat and the degrees of yellowing measured photometrically. Sheets made without size showed practically no yellowing under the test conditions. Sheets sized with different amounts of rosin evidenced that the degree of yellowing is dependent upon the amount of rosin present. Concludes that no matter how carefully the paper is prepared, the addition of rosin as a sizing material will, in the course of time, produce yellowing. Sheets containing various quantities and combinations of rosin, iron and gelatine were further prepared. (The iron was added in various amounts to the alum used to precipitate the size.) It is found that the presence of iron is a very important factor and that the degree of yellowing is more or less proportionate to the amount of iron introduced. States that it is generally conceded that an animal-sized paper will yellow more than one which is free of gelatine sizing. The experiments seem to bear out this point thoroughly. Concludes that in cases where it is necessary that a paper retain its original color, it is important to use as little rosin size as possible, consistent with the degree of sizing required, and to use always an iron-free aluminum sulphate as the precipitant. The animal sizing should be omitted or kept as low as possible.

LYDENBERG, HARRY MILLER. Bibliography of paper deterioration. (Paper, New York, July 17, 1918, v. 22, no. 19, p. 12-13.) †VMPA

Forty-one entries, a number of which have been incorporated in this bibliography.

The YELLOWING of paper. (Paper makers' monthly journal, London, 1918, v. 56, p. 40-41.) †VMPA

"Yellowing is most quickly brought about by light or heat, for if both of these factors be excluded and the paper exposed freely in a dark cold room, the change is almost imperceptible. It is well known that the papers most quickly degraded are those containing a high proportion of lignified fiber, as it is only necessary to expose them in the sunlight for a short time to obtain a marked reduction to yellow or brown. The greater the percentage of mechanical wood pulp or lignified fiber, the stronger is the alteration of color. In the case of wood-free papers, the causes of yellowing are the formation of soaplike compounds of iron with rosin and fatty bodies. The amount of such compounds is a measure of the extent to which yellowing is likely to take place by lapse of time. . . . When the rosin size was extracted early from samples so as to remove the yellowing compounds, the paper retained its original color, thus proving that rosin was an agent in the degradation of color. Rosin iron soap, a compound very sensitive to light easily contributed to the yellowing of papers. . . . The yellowing is not an oxidation effect, for the same effects were obtained in an atmosphere of nitrogen."

A translation of a section by the same title in the 4th edition of Herzberg's *Papierprufung*. Fifth and sixth editions of this volume have since appeared, which contain the same section somewhat amplified. The original works referred to are by Klemm, Schoeller and Zschokke.

This translation also in *Paper*, New York, 1918, v. 22, March 13, p. 11-12.

DECAY of paper in hot climates. (Pulp and paper magazine of Canada, Gardenvale, Que., 1919, v. 17, p. 955.) †VMPA

Also in *Paper*, 1920, v. 25, no. 20, p. 971.

[The DISEASES of paper.] (Papeterie, Paris, 1919, v. 41, p. 394-397.)

GALIPPE, V. Des microrganismes vivant dans le papier; leur résistance à l'action de la chaleur et à celle du temps. (Académie des sciences, Comptes rendus, Paris, 1919, tome 169, p. 814-817.) *EO

It has been shown that filter paper heated in an autoclave at 120° C. for half-an-hour still contains in its fiber a large number of living bacilli. Examination of samples of paper made in the 15th and 18th centuries, of a sample of Chinese paper made long before the time of the discovery of printing, and of a sample of papyrus dating back to 200 B. C. showed that in every case living bacilli were present in the fibers of the samples.

Abstract in *Jour. Soc. Chem. Ind.*, 1919, v. 38, p. 896A; *Chem. abst.*, 1920, v. 14, p. 1218; *Iberica*, 1920, v. 13, p. 20.

SÉE, PIERRE. Les maladies du papier piqué. Paris: O. Doin et fils, 1919. 168 p., 17 pl. 8°. VMP

General conclusions:—1. The stains on musty or molded paper, which had formerly been ascribed to the action of insects are in reality caused by certain lower fungi. 2. These fungi frequently secrete a diffusible pigment. The colored zone is often visible on the two faces of the paper and, if diffusion is marked, is even capable of successively traversing several pages of a book. 3. In addition, these fungi partially destroy the fibers of paper and sometimes cause perforation. 4. The infection can be caused by non-sterilized material introduced into the pulp, can be acquired by the pulp during the periods of manufacture or can be acquired by the finished paper after more or less prolonged periods of time. 5. The conditions under which the molds vegetate in the paper, vary with the species. There are the perfect forms (Chaetomium, Myxotrichum, etc.), the fertile filamentous forms (Stachybotrys, Aspergillus) or sterile (Fusarium) and the fumagoide forms (Alternaria, Stemphylium). 6. The life span of the organisms also varies with the species. For certain of them it is several years. 7. The fungi which grow on paper can be designated as "papyricoles" and constitute a flora specially allocated to a specific medium which is paper. 8. Those destructive effects (stains, perforations, etc), which have been observed on old books, can be reproduced artificially by systematic culturing the "papyricole" molds on sterilized paper. 17. Fumigation by formaldehyde, because of the sterilizing action, inhibits or arrests the musting of volumes.

ARIBERT, and BOUVIER. [Durability and conservation of paper.] (Papeterie, Paris, 1920, v. 42, p. 338-352, 386-392.)

The various durabilities of cotton rag stock, chemical pulp and mechanical pulp are discussed. Cooking of the raw materials should be just sufficient to dissolve out impurities, followed by a thorough washing to eliminate soluble products formed during cooking. Proper bleaching consists in oxidizing all substances other than the cellulose. Addition of acids and heating the stock to hasten bleaching is usually detrimental. A limited quantity of properly purified filling materials is not detrimental to the durability of paper.

Also in *Paper*, 1920, v. 27, no. 4, p. 13-14, 44; no. 5,, p. 18-19; no. 6, p. 20-21; no. 7, p. 23-25.

Abstract in *Chem. abst.*, 1920, v. 14, p. 2551-2552.

SINDALL, ROBERT WALTER. The deterioration of paper. (In his: Paper technology. London: Charles Griffin and Co., 1920. 8°. p. 10-11.) VMP

"Papers containing mechanical wood become brittle, lose strength, and discolour very rapidly. This is due to slow oxidation of the non-cellulose constituents in the wood. Even traces of ground wood render a paper liable to decay. Papers containing straw and esparto cellulose are more resistant than those containing ground wood. The admixture of excessive amounts of clay and similar loadings is scarcely a direct cause of decay, but since a corresponding increase of sizing ingredients is necessary to bind the mineral matter to the fiber, the power of resistance to deterioration is lowered. . . . Sizing ingredients, such as gelatine and starch, only produce a marked deterioration in paper under conditions which favour decomposition of the sizing material itself—namely, moisture in the air. The nitrogenous compounds in commercial gelatines are excellent mediums for the growth of many forms of bacteria. Rag papers sized with gelatine placed in stoppered bottles with a few drops of water and kept at a temperature of 80° F. will rapidly exhibit micro-organisms of great variety. Rosin size in paper acts indirectly as a cause of loss in quality by reason of changes set up by sunlight. . . . Impurities due to careless manufacture are a frequent source of trouble."

SUTERMEISTER, EDWIN. Effect of bleaching on strength of stock. (In his: Chemistry of pulp and paper making. New York, 1920. 8°. p. 249-254.) VMP

Contradicting Frohberg finds in the case of sulphite fiber that bleaching increases the folding strength, although with soda fiber the strength is reduced by bleaching. The copper number of all fibers, however, is increased by bleaching.

KLEMM, PAUL. Rasches Vergilben von holzschliffhaltigem Papier. (Papier-Zeitung, Berlin, 1921, Jahrg. 46, p. 1954.) †VMA

Rapid discoloration of a particular shipment of paper was attributed to the action of aniline vapors. These latter possibly arose from certain printer's varnishes. The yellow discoloration of mechanical wood pulp by aniline is stated to be an extremely sensitive reaction.

LYDENBERG, HARRY MILLER. Saving the newspaper files for posterity. (New York Evening Post, April 2, 1921.) *A

A rather detailed account of the attempts by The New York Public Library and other institutions to preserve newspaper files.

MATERIAL for history is endangered. (New York Times, August 15, 1921, p. 12.) *A

States that the problem is particularly serious in India where the climate is hot and wet.

TIMES files saved by a new method. (New York Times, August 12, 1921, p. 12.) *A

Describes the use of Japanese tissue paper by The New York Public Library.

The TIMES war news. (New York Times, August 13, 1921, p. 8.) *A

Preservation of World War clippings at Princeton is described. At a cost of $20,000 a scrap book of 81,242 pages has been prepared. The clippings were treated with a specially prepared paste which acts as a preservative. After being mounted the loose sheets were placed between blotters and each submitted to a 3-ton pressure. This pressure was maintained for five weeks with each sheet, a careful watch being kept from day to day to see that the pressure was uniform. The result was that all the moisture was taken from the paste leaving the columns of printed matter a permanent part of the page.

HAAS, B. Über Eindämmung und Behebung der Krankheits- und Zerstörungser-scheinungen von wertvollen Büchern, Handschriften und Zeichnungen. (Chemiker-Zeitung, Cöthen, 1922, Jahrg. 46, p. 561-562.) †VOA

Abstract in *Chem. abst.*, v. 17, p. 2192.

ADAMS, SAMUEL H. Fade-outs of history. (Collier's weekly, New York, May 12, 1923, p. 14.) *DA

"The ancients wrote their messages on the eternal rocks. We write ours on the transient trees, pulped and rolled into perishable paper. In a word our principal records of the present day and recent history are already in process of resolving themselves into an inferior grade of sawdust."

Quoted in *Globe and commercial advertiser*, New York, May 30, 1923.

ANDÉS, LOUIS EDGAR. The characteristics of paper. (In his: The treatment of paper for special purposes. London, 1923. 8°. p. 190.) VMP

"The deterioration of the paper must be sought in the selection and preparation of the raw materials—the pulping mill, for instance, being run in such a

way that the fibers are injured and ground too fine. In bleaching again, insufficient care is used in protecting the fibers from the chemicals in the treatment, the washing may be inadequate and so forth. It must also be remembered that any earthy substance added to the fibers reduces their felting power and tensile strength of the finished paper."

RECORDS that will not endure. (New York Herald, June 3, 1923. p. 4.) *A

"The journals that add so much to our knowledge of the colonial period in the United States, the papers like the old New York *Packet*, that reflect so well the difficulties encountered in making a nation out of 13 unfriendly states, were printed on rag paper which will carry its story 500 years from now as it does to-day. . . . The wood pulp paper now in use crumbles and breaks to bits in less than a lifetime."

SOME experiments toward the preservation of paper made by The New York Public Library.

Printed at The New York Public Library for distribution at the Paper Industries Exhibition, Grand Central Palace, New York City, April 9-14, 1923.

Specimens exhibited have been treated with gummite, sprayed with cellulose acetate, dipped in cellulose acetate, treatd with varnish, pastd on cambric, treated with hemp tissue, covered with condenser tissue, covered with rope tissue and covered with Japanese tissue paper.

GESELL, WILLIAM H. Bacteria that dissolve paper. (Paper makers' monthly journal, New York, 1924, v. 62, no. 5, p. 201-202.) †*VMPA*

MATAGRIN, M. Les ennemis du papier et comment on l'en preserve. (Papeterie, Paris, 1924, v. 46, p. 646-650; 1925, v. 47, p. 562-566, 614-618, 710-714, 750-754, 997-1001, 1138-1145; 1926, v. 48, p. 25-29.)

Discusses the damage caused by rodents, insects, molds, fungi, and bacteria; the deterioration due to moisture and chemical agents; and the methods used to prevent such destructive effects.

Abstract in *Chem. abst.*, 1926, v. 20, p. 2071.

KOHLER, S., AND G. HALL. Investigations into the durability of paper. (World's paper trade review, London, 1925, v. 84, no. 21, p. 1610, 1612, 1614.)

LYDENBERG, HARRY MILLER. Inferior paper endangering the permanence of the printed page. (Pulp and paper magazine, Gardenvale, 1925, v. 23, p. 985.) †*VMPA*

Paper of inferior lasting qualities is attributed to the demands of modern speed production. Wood-pulp paper is heavily indicted. Emphasizes the necessity of a permanent paper for printing trade statistics, legal records, public documents, etc.

From the *New York Times book review section*, August 2, 1925, p. 2.

OLIVER, W. E. Composition for hardening and preserving paper. (U. S. patent no. 1,537,960, 1925.)

Arrowroot is prepared with four times its amount of water and mixed with swelled gelatine and a small proportion of evaporated milk.

Abstract in *Chem. abst.*, 1925, v. 19, p. 2131-2132.

HALL, GÖSTA. Permanence of paper. (Paper trade journal, New York, 1926, v. 82, p. 52-58.) ††*VMA*

Work carried out at the Swedish Government Testing Institute. A large number of samples were exposed to sunlight and a temperature of 100° for various periods. This exposure is considered to have the same qualitative effect as aging. After exposure the folding endurance and copper number were determined, the former being considered a sensitive test for physical deterioration and the latter for chemical deterioration. It is concluded that papers made from bleached sulphite are less permanent than those from rags. Apparently no marked distinctions exist between bleach linen, bleached cotton and unbleached cotton. Rosin sizing probably causes a reduction of permanence as compared with unsized paper.

Published in further detail in *Svensk papperstidning*, n:s 10-14, 16-18, 1925, and *Meddelande fran Statens Provningsanstalt*, Stockholm, n:r 28.

"TIMES" to print copies on durable rag paper. (New York Times, Dec. 5, 1926.) *A

"It will be the first time THE TIMES has been printed on rag paper since the Civil War. It will also represent, it is believed, the first instance in which any newspaper has printed an edition on all-rag paper since the inferior but more economical wood-fibre newsprint universally took its place, beginning in the '70s and '80s. . . . American journalism from the '70s and '80s up to today appears certain to become eventually a blank. For example, the bulk of even the 1914-1918 newspaper accounts of the World War has already yellowed and aged so badly in the files that complete disintegration and disappearance are only a question of a few years more. . . . Journals and gazettes of the Revolutionary War period, printed on good rag paper 150 years ago, however, are in shape to be consultable, and evidently will remain so for years to come. . . . A book dated 1480 when inspected last week, was observed to have preserved all its medieval charm and proved that a printed cotton page could remain not only clear and unblemished up to and beyond 500 years, but beautiful as well.

"To comprehend what happens to paper made of wood fibre to make it die comparatively early and what constitutes the superiority of rag paper, one needs an understanding that the former paper is nothing but a mechanical mixture of fibres, reduced from the raw wood, either mechanically by grinding or chemically by dissolving the fibres apart.

"In either event the wood-pulp fibres inevitably retain most of the original impurity, in a paper-making sense, of the raw wood. These impurities are turpentine, resins, gums or sap. These nourishing 'fats' remaining in ground-wood constitute its weakness. It is with these that light and air play havoc when the file of such a newspaper undergoes oxidation. Chemical wood-pulp paper fares better, experts say, because the chemical treatment produces a certain embalming. But when the 'fatty' condition of ground-wood paper deteriorates, as described, the atomic cell of such a paper, while retaining temporarily its original form, is but a shell of its former self—dry and lifeless. The result is that ground-wood, or mechanical, pulp newsprint speedily loses its nature. It becomes brittle and discolored as the atmosphere 'bleeds' or renders it of its fats. . . .

"Rag fibres, properly treated, approach very closely to the pure cellulose state, whereas wood fibres, no matter how carefully prepared, contain many impurities, which disintegrate rapidly. If the refining process is carried far enough to overcome or remove these impurities, the fibres themselves break down and become worthless. Not so, however, with rag fibres. These start off in a nearly pure state. The bleacring removes the coloring matter in the rags, and the gentle cooking and washing process removes the bleach or any other impurities which may exist, so that the resulting fibres are very close to chemically pure cellulose, the basis of the life of paper."

EDITORIAL on New York Times rag paper edition. (New York Times, Jan. 1, 1927, p. 12, column 3.) *A

MACNAUGHTON, W. A. Modern wood pulp papers show increasing durability. (New York Times, April 10, 1927, section 9, p. 21, column 4.) *A

A letter to the editor. Maintains that the durability or permanence of wood fibers can be made to equal that of rag fibers. The increased bleaching treatments to which rags are submitted during their history and improvements in the methods of refining wood pulp have tended to lessen the difference in the durability of the two materials. Quotes Kirchner, Herzberg, Hall, Heuser, Hilbert, and Burgess.

MACNAUGHTON, W. G. Fiber composition and paper durability. (Paper trade journal, New York, 1927, v. 84, no. 12, p. 47-48.) †*VMA*

MULLER, FRANK. All rags aren't in music. (Brooklyn Central, Sept. 16, 1927, p. 13-14.)

A reprint from the *Erie R. R. magazine*.

Refers to the action of the New York Times in printing a 100 per cent pure rag paper. A bound volume of the all-rag edition for one year is stated to cost $170 as against $12 by mail for the ordinary edition unbound. Comments that it is only a question of time when the newspaper records of the "wood pulp era" will become obliterated. Describes the methods by which rags are collected.

ARNOULD, E. La fabrication des papiers de longue conservation et causes de leur altération. (Papier, Paris, v. 31, no. 4, April, 1928, p. 431-436.) †*VMA*

BENTZEN, TH. C. Permanence of paper. (Paper trade journal, New York, 1928, v. 86, no. 8, p. 147, 149.) †*VMA*

FOX, C. J., AND L. HERBS. Durability of paper. (World's paper trade review, London, 1928, v. 90, p. 1046, 1048.)

HOFFMAN, W. F. Effect of residual acid on rate of deterioration of paper. (Paper trade journal, New York, 1928, v. 86, no. 9, p. 58-60.) †*VMA*

INCOMBUSTIBLE paper. (Industrial and engineering chemistry, news edition, 1928, v. 6, Dec. 20, p. 3.) *VOA*

By means of a process which is the subject of a patent application, a Berlin chemist, Fritz Frank, has obtained paper which will not burn at temperatures up to 700° C., and which at the same time is an extremely poor conductor of heat. The production of this incombustible paper is said to involve a transformation of cellulose, without a perceptible alteration of the appearance of the paper after completion of the process. It is supposed that the paper will find application in the printing of valuable documents.

LEAGUE OF NATIONS.—COMMITTEE. Preservation of manuscripts and printed books. (Library journal, New York, 1928, v. 53, p. 713-715, 710.) **HA*

Translation of documents submitted to the International Institute of Intellectual Cooperation at Geneva in August, 1928.

M. Holwech, a member of the technical sub-committee, states "although completely in accord with the feeling that unbleached rags (linen or cotton) are the best primary materials for making paper of lasting quality, I think it necessary to say that paper so made would be so costly that it would have but very limited use."

Dr. Katzarof, rector of the University of Sofia, says that an investigation of various important Bulgarian archives has demonstrated a deplorable state of preservation. The policy of special editions on durable paper is favored. M. H. Lindencrone, of Denmark, gives an historical account of experiences in that country with wood pulp and sulphite cellulose.

In the final resolutions and recommendations of the committee, a preference for paper from unbleached rags is declared, and the desirability of special rag paper editions of newspapers is emphasized. Where it is impracticable to run off special editions, copies intended for legal deposit may advisably be covered with Japanese tissue paper as has been done for ten years and more with certain newspapers in the United States. Finally it is recommended that a bulletin be published giving a resume of all new efforts and developments in this field.

PEARSON, RALPH M. An artist in the making of books. (Personality, Garden City, 1928, v. 1, no. 6, p. 34-40.)

An interview with Mr. Dard Hunter, who is engaged in the manufacture of hand-made paper. It is stated that in America paper was hand-made as early as 1698; the craft, however, died out about 1820 with the advent of papermaking machinery. End paper made by Hunter has a tensile strength of 125 pounds as compared with 6 pounds for newspaper and 48 pounds for paper money. Hunter considers that his paper will be the only paper in existence 500 years from this date. States that most European hand-made papers are made from bleached rags and that after such chemical treatment the life of the resulting paper is markedly diminished. Places the cost of hand-made paper from white rags at approximately $2.50 an end sheet. Machine-made paper cannot possibly be preserved as long as 200 years.

RANC, ALBERT. Chimie et la presse. (Chimie et industrie, Paris, special no., April, 1928, p. 101-108.) *VOA*

SURAUD, A. Le papier durable. (Le Moniteur de la papeterie française, Paris, 1929, v. 60, no. 5, March 1, 1929, p. 99-100.) †*VBA p.v.*

Variation of the Density of Sulphate Black Liquor With Changes of Temperature*

By Harry D. Crandon[1]

This subject came up in connection with a study of the electrolytic conductivity of black liquor made by the Bogalusa Paper Company, Inc., Bogalusa, Louisiana.

It was their purpose to work out a control method for pulp washing, and also for effluent waste, based on some form of conductivity recorder. In their study of the black liquor they found that different samples behaved differently. When plotting the conductivity against the specific gravity, it was found that curves on the same stampede at different temperatures did not correspond.

Apparently the temperature effect was not the same for the specific gravity as for the conductivity. This led to the inquiry regarding the variation of the density of sulphate black liquor with changes of temperature. Samples of sulphate black liquor for the treatment of this subject were obtained from the Bogalusa Paper Company.

Apparatus Used

The apparatus used in this thesis is shown in Fig. 1, 2, and 3. Fig. 1 shows the apparatus unassembled, Fig. 2 is a view of the apparatus as it is used except that the shield has been taken off, and Fig. 3 is a view of the apparatus as used.

In Fig. 1, (A) is a water-glycerin bath, (B) is a pycnometer, (C) is a wire cage to support the pycnometer in the bath, (D) is a thermometer, (E) is a stirrer, (F) is a motor that drives the stirrer, (G) is a heating unit, (H) is a water rheostat, and (I) is the adjustable part of the rheostat that is used to vary the current to the heating coil (G). In Fig. 2, (J) is a lamp used for low temperatures and in Fig. 3, (K) is a shield used to obtain a more constant temperature.

Analytical balance was used to weigh the pycnometer. The pycnometer was thoroughly cleaned, dried, and weighed on the analytical balance. It was then filled with distilled water at constant temperature and weighed again. By subtracting out the weight of the pycnometer the weight of water held by the pycnometer at the temperature of filling was obtained. From this weight it was possible to calculate the weight of water held by the pycnometer at 20 degrees C. with the use of a water density table.

The temperatures used in the constant temperature bath for the density determinations of the black liquor were 25 to 95 deg. C., which is the practical range used by the sulphate mill during the washing of the pulp. The lamp in Fig. 2 was used for temperatures up to 55 deg. C. with which it was possible to hold the temperature within plus or minus 0.1 deg. C. by careful regulation of the rheostat shown in Fig. 1. The heating coil (G) (Fig. 1), used for temperatures from 55 to 95 deg. C., gave tem-

* A Thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Science at the University of Maine under the supervision of Paul DeC. Bray, professor of pulp and paper chemistry.

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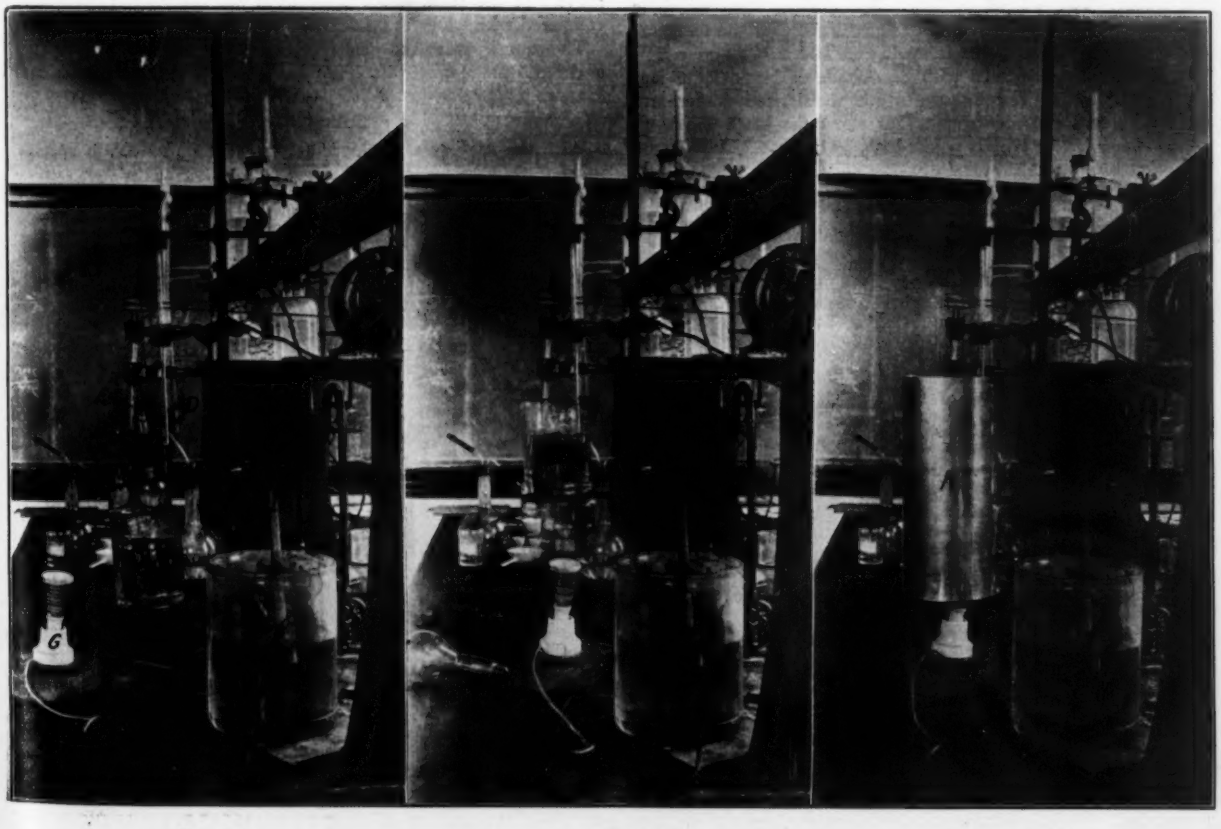


Fig. 1 Fig. 2 Fig. 3

MILL SAMPLE

Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	10.9581 gm.	9.9593 gm.	1.1001
30	10.9359 "	"	1.0980
35	10.9177 "	"	1.0962
40	10.8910 "	"	1.0935
45	10.8706 "	"	1.0915
50	10.8469 "	"	1.0891
55	10.8224 "	"	1.0867
65	10.7659 "	"	1.0810
75	10.7107 "	"	1.0755
85	10.6395 "	"	1.0683
95	10.5803 "	"	1.0624

COOK NO. 1

Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	11.0831 gm.	9.9593 gm.	1.1128
30	11.0609 "	"	1.1106
35	11.0388 "	"	1.1084
40	11.0168 "	"	1.1062
45	10.9925 "	"	1.1038
50	10.9710 "	"	1.1016
55	10.9448 "	"	1.0990
65	10.8927 "	"	1.0938
75	10.8361 "	"	1.0881
85	10.7772 "	"	1.0822
95	10.7132 "	"	1.0757

COOK NO. III

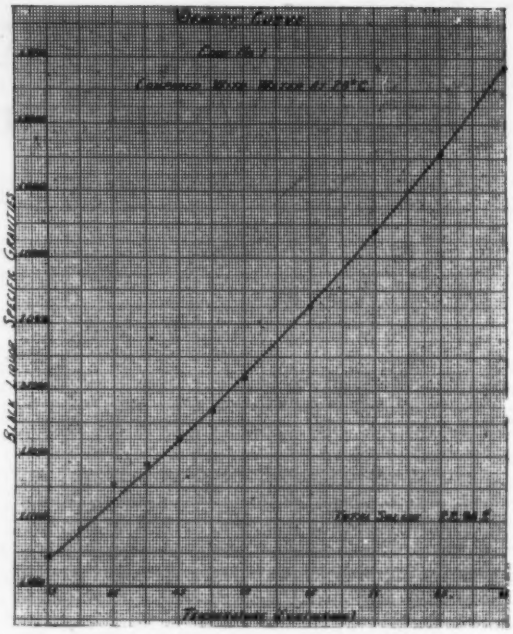
Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	15.3396 gm.	13.7095 gm.	1.1188
30	15.3089 "	"	1.1167
35	15.2948 "	"	1.1156
40	15.2556 "	"	1.1128
45	15.219 "	"	1.1102
50	15.1838 "	"	1.1076
55	15.1462 "	"	1.1048
65	15.0837 "	"	1.1002
75	15.0088 "	"	1.0948
85	14.9081 "	"	1.0875
95	14.8126 "	"	1.0805

peratures within plus or minus 0.2 deg. C. of the desired temperature.

Procedure

Six samples of black liquor were obtained from the Bogalusa Paper Company. Four of these were used at their original concentration, one was diluted with one part water to three parts of black liquor, and one was diluted with one part water to one part black liquor. The weight of black liquor from each of these samples held by the pycnometer was determined over the temperature range given above by the following method.

The pycnometer was filled with the sample of black liquor and placed in the constant temperature bath at the desired temperature and kept there for fifteen minutes to allow the black liquor to come to the same temperature as the bath. The excess black liquor



Cook No. 1

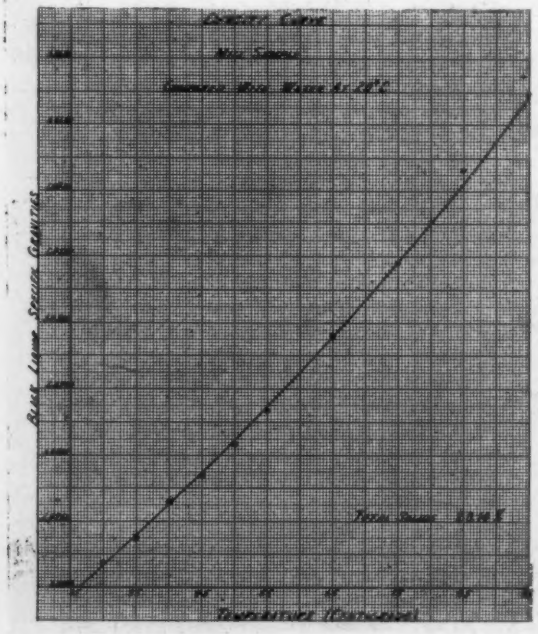
was blown from the top of the pycnometer and the pycnometer taken from the bath, cleaned, allowed to cool, and then weighed on the analytical balance. This process was repeated at each temperature used and satisfactory checks obtained on the weight of black liquor held by the pycnometer at the temperature of filling.

With the weights obtained it was possible to calculate the specific gravity of the black liquor samples at the different temperatures compared with water at 20 deg. C.

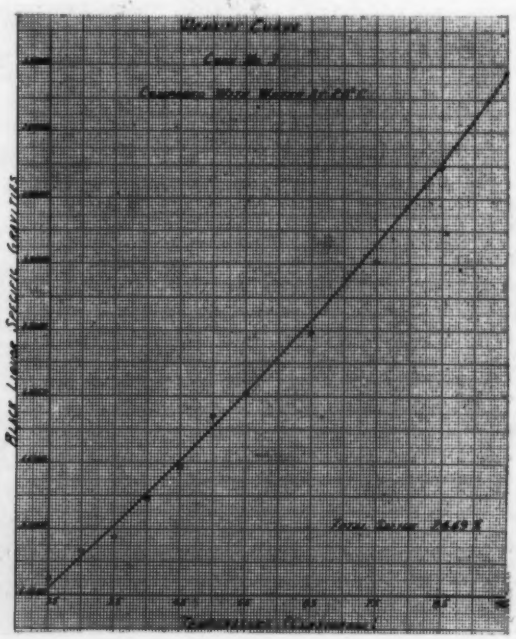
The samples were analyzed for per cent total solids by weighing a definite amount of the black liquor in a nickel crucible and evaporating to dryness at 100 deg. C.

Conclusion

With the apparatus employed it was possible to obtain specific



Mill Sample



Cook No. 3

COOK NO. V

Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	15.3310 gm.	13.7095 gm.	1.1182
30	15.3023 "	"	1.1162
35	15.2723 "	"	1.1139
40	15.2390 "	"	1.1116
45	15.2060 "	"	1.1092
50	15.1716 "	"	1.1066
55	15.1360 "	"	1.1040
65	15.0626 "	"	1.0988
75	14.9823 "	"	1.0928
85	14.9008 "	"	1.0869
95	14.8167 "	"	1.0808

COOK NO. VII

Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	14.7939 gm.	13.7095 gm.	1.0792
30	14.7677 "	"	1.0772
35	14.7408 "	"	1.0752
40	14.7114 "	"	1.0731
45	14.6796 "	"	1.0708
50	14.6473 "	"	1.0684
55	14.6139 "	"	1.0660
65	14.5382 "	"	1.0604
75	14.4580 "	"	1.0546
85	14.3728 "	"	1.0477
95	14.2874 "	"	1.0422

COOK NO. IX

Temp. ° C.	Wt. B. Liquor in Pycnometer	Wt. Water in Pyc. at 20° C.	Specific Gravity
25	26.5652 gm.	24.9506 gm.	1.0645
30	26.5171 "	"	1.0624
35	26.4715 "	"	1.0610
40	26.4187 "	"	1.0585
45	26.3652 "	"	1.0563
50	26.3060 "	"	1.0540
55	26.2371 "	"	1.0512
65	26.1028 "	"	1.0458
75	25.9623 "	"	1.0402
85	25.7978 "	"	1.0338
95	25.6398 "	"	1.0273

gravities that were accurate to the third decimal place. The specific gravities obtained for the same sample of black liquor at the same temperature varied from 0 to 4 units in the fourth decimal place.

The values when plotted against the temperature gave a slightly curved line, the drop in density from 90 to 95 deg. C. being slightly greater than for any other five degree change of temperature below 90 deg. C. For all practical purposes it might be considered as a straight line.

The per cent total solids of the black liquor samples, as used, varied from 12.41 to 24.51 percent.

The change of density over the temperature range of 25 to 95 deg. C. was the same for all samples.

In view of the above facts it was concluded that no matter what

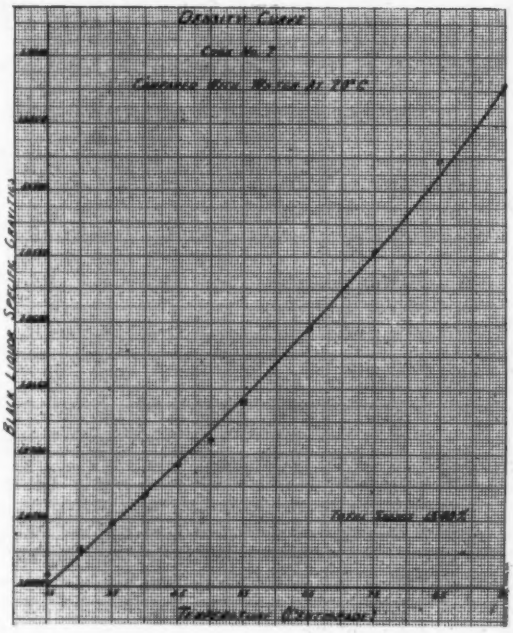


FIG. 7

the initial density of the black liquor may be (within the range of mill practice), the change of density over the same temperature range is uniformly the same.

Palouse Pulp & Paper Co. Elects Officers

PORTLAND, Ore., August 1, 1929.—The Palouse Pulp and Paper Company, Palouse, Wash., elected permanent officers at a recent meeting of the stockholders as follows: President, A. L. Maxwell; vice-president, J. A. McMillen; secretary, Allan Lamphere; treasurer, F. L. Aukorn. The company plans on the establishment of a plant to utilize straw in the production of board and paper.

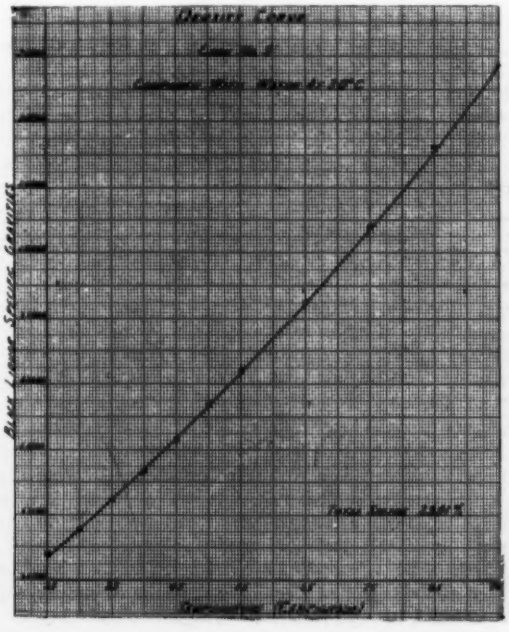


FIG. 5

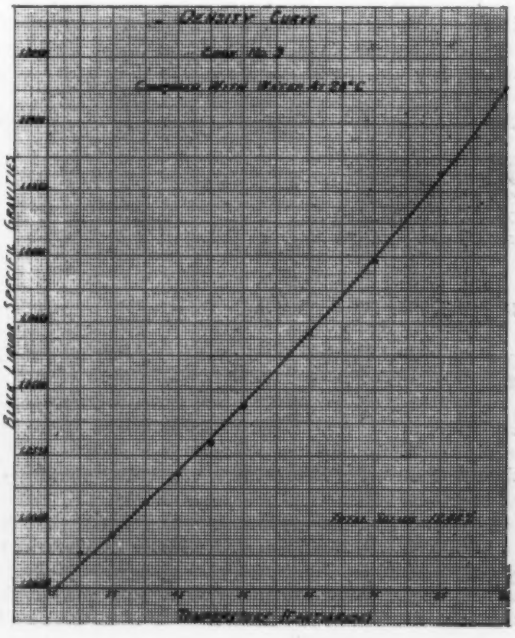


FIG. 9

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

By Clarence J. West, Chairman

Monel Metal in the Paper Mill. A. C. Co. Paper Mill 51, No. 38, 8 (Sept. 22, 1928). Monel metal has been found more satisfactory than the metals previously used for the following uses: suction box rods for varying the working lengths of the box to suit different deckle widths, beater bedplates, screws for rotary screens, piston rods for plunger pumps, impeller shafts for centrifugal pumps. A. P.-C.

Chromium Plating in the Paper Industry. Hugh D. McLeese. Pulp & Paper 26, 1225-1226 (Sept. 6, 1928). A brief review of the occurrence and properties of chromium, of the history of chromium plating, of the uses to which it has been put and its applications in the paper industry. A. P.-C.

Improved Humidity Chart. D. A. Davis. Pulp & Paper 26, 1158-1160 (Aug. 23, 1928). A description of a humidity chart which is an improved form of a chart given by Walker, Lewis and McAdams in their "Principles of Chemical Engineering," McGraw-Hill (1927) and which has been found particularly suitable to paper mill problems. It has a temperature range of 0° to 150°F. and a humidity range of 0 to 80 pounds of water vapor per 1000 pounds of bone-dry air, which ranges are sufficient for any conditions apt to be encountered in the pulp and paper mill. The method of using the chart is explained by means of an example. A. P.-C.

Origin and History of Paper. Douglass C. McMurtrie. Pulp & Paper 26, 1095-1096 (Aug. 9, 1928). Historical notes on the origin of paper making. A. P.-C.

First Machine Made Paper in America. Anon. Paper Mill 51, No. 32, 9, 16 (Aug. 11, 1928). Historical notes on the first paper mill built in America near Philadelphia, established by William Rittenhouse in 1690, and on the Gilpin paper mill on the Brandywine near Wilmington, which was the first mill in America to produce machine made paper. A. P.-C.

Profit and Loss in Fibre Utilization. C. M. Baker. Paper Trade J. 87, No. 12, 32-36 (Sept. 20, 1928). Paper Mill 51, No. 38, 9-10, 14 (Sept. 22, 1928). Results are given of a survey of fiber recovery and of fiber losses in white water in United States mills, showing an annual estimated saving of $5,250,000 in fiber utilization and an estimated annual potential loss of $6,375,000. A. P.-C.

Pulp Mill Waste Recovery Methods. J. B. Kershaw. Paper Trade J. 87, No. 6, 61-62 Aug. 9, 1928). A review. A. P.-C.

Shipping Container and Folding Carton Costs. H. L. Miller. Pulp & Paper 26, 1163-1164 (Aug. 23, 1928). A description of the cost system of the Paraffine Cos. Inc. A. P.-C.

Power Costs. F. C. Stamm. Paper Ind. 10, 662-664 (July 1928. A brief discussion of controllable items in power costs and of the necessity of power costs and their uses. A. P.-C.

U. S. Patents on Paper Making. Clarence J. West. Paper Trade J. 87, No. 5, 58-59 (Aug. 2, 1928). A list of U. S. patents on papermaking issued in April, May and June, 1928. A. P.-C.

Manufacture and Use of Wood Flour. Anon. Pulp & Paper 26, 1261-1263 (Sept. 13, 1928). A review of the processes of manufacture of wood flour and of its uses, with a discussion of Canadian production, consumption and requirements. A. P.-C.

Technical Control for Board Mills. E. Frank Whittington. Paper Ind. 10, 1188-1189 (Oct. 1928) Pulp & Paper 26, 1407-1408 (Oct. 11, 1928). Paper Trade J. 87, No. 15, 57-58 (Oct. 1, 1928); Paper Mill 51, No. 39, 28, 36 (Sept. 29, 1928). A discusison of the control required in board mills, suggesting the following: analysis of incoming raw materials(water, pulp and shavings, size, alum and fillers), weighing of beater furnish, check of size and alum solutions, determination of the pH. freeness and consistency of the beater furnish, basis weight an caliper of the sheet, determination of the moisture content, degree of sizing, surface finish of gloss, ash content, and bursting, tensile and folding strength of the finished board. A. P.-C.

Alkali-Soluble Constituents of Sulphite Cellulose and Artificial Silks. W. Weltzien. PAPIERFABR. 26, Fest-u. Ausland Heft, 115-120 (1928). The solubility of different kinds of cellulose and of artificial silk in sodium hydroxide solutions at 18-19°C. has been determined. On plotting, the percentage of cellulose dissolved against the concentration of sodium hydroxide solution (in volume per cent) characteristic curves are obtained which in all cases rise steeply to a maximum corresponding 10-12 per cent of sodium hydroxide. Increasing the time of treatment of the cellulose from 3 to 30 hrs he gives maximum solubility in a solution containing nearer 10 per cent than 12 per cent sodium hydroxide. The percentage of cellulose dissolved under these conditions of maximum solubility varies with the material examined, 15-25 per cent of sulphite cellulose, 30 per cent of cuprammonium silk, 40-50 per cent of viscose and 100 per cent of nitro silk being representative values. C. J. W.

Carbohydrate Constituents of Sodium Hydroxide Cellulose from Pine Wood. E. Hagglund and F. W. Klingstedt. Cellulosechemie 9, 77-80 (1928). Sodium hydroxide cellulose obtained as a 43% yield from pine wood was found to contain 3.3% mannan, 5.3% pentosan, no galactan and only a trace of levulan. After mercerization of this material with 17.5% sodium hydroxide solution an alpha cellulose was obtained which still yielded 2.1% of mannan and 1.5% of pentosan, thus differing from similar material obtained from sulphite cellulose which contained no hemicellulose. The total mannan content is obtained by first converting the material completely into sugar and then determining the mannose present. Lignin does not interfere with the determination of pentosan in the cellulose. C. J. W.

Methods of Obtaining Fibrous Precipitates of any Substance: The Structure of Fibers in General and of Cellulose Fibers in Particular. P. P. Von Veimarn. Repts. Imp. Ind. Res. Inst. Osaka, Japan, 8, 7-17 (1927), Russia 3, 995-1003 1295-1289 (1928). Fibers are defined as "aggregates of disperse particles whose length is several times the breadth and thickness." Any substance may be obtained in the fibrous form under suitable conditions, though the fibers may not be very strong or durable. There are three ways of obtaining fibers; (1) precipitation of the substance from very concentrated solutions of reagents in a medium in which it is practically insoluble, (2) precipitation under conditions favoring the formation of needle shaped crystals, and (3) aggregration of small rod-like particles into long fibers by the orienting effect of flowing in streams. Microscopic examination of swollen and partly dispersed fibers of cotton cellulose show them to be made of concentric tubes of chemically different substances. The outer tube is a wax-like substance more resistant to reagents than the rest. The middle tube is predominantly cellulose but contains other substances in admixture. The inner tube, containing the lumen, is a plasmatic formation. There are transition layers between the tubers and the cellulose tube is itself further subdivided into a series of very thin tubes, the walls of which are made up of thin fibrils arranged parallel to one another along the length of the tubes. Wood cellulose fibers likewise consist of three concentric tubes of chemically different substances, the outer tube of which is more resistant to reagents. A. P.-C.

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Accounting For Forests Under Sustained Yield Management

By Bernard A. Chandler[1] and Frank A. Linzel[2]

The exhaustion of forests, the civilized world over has been a matter of public concern for a generation and the same economic forces which brought about sustained yield management of forest lands in Europe many years ago are being felt in this country. Industries dependent on the products of the forest for raw materials, find that the investment world, educated in finance as never before, considers carefully the source and supply of raw material available for a particular company before subscribing for the new capital desired.

Many companies dependent on the products of the forest for raw material are building up reserves of timber for their future needs. Some lumber companies are cutting only the larger trees in their forests, planning to come back for a second and third cut. Pulp and paper companies who, heretofore, have been buying up large reserves of mature timber are becoming interested in young growing timber, forest tree nurseries and seed trees, with the purpose in mind of providing supplies of timber for their future needs. These pulp and paper companies have very large investments in manufacturing plants which cannot be moved economically and whose scrap value is very nominal. Consequently the problem of supplying raw materials for these plants is particularly acute. The industry is in the transition stage from destructive lumbering to the sustained yield system of management.

The purpose of this article is to discuss briefly destructive lumbering versus sustained yield management and to present suggestions in connection with the accounting for perpetual timber crops.

Destructive Lumbering vs. Sustained Yield Management

In practice these systems grade into each other so that it is sometimes hard to determine which system is being practiced, but they are very different in their fundamental conceptions. Under the destructive lumbering system, the forest is considered as a business venture in which little thought is given to the perpetuation of a future supply of timber. The merchantable timber is cut and disposed of; the land is sold for agriculture, held in an unproductive condition or entirely abandoned. Purchases of additional properties are usually of mature timber even when it is not contemplated to cut such timber until the present stand has matured on much of the area, has died and been replaced by what was young growth at the time of purchase. It does not take into consideration the fact that timber grows and that young timber will eventually mature.

Under sustained yield management the forest is considered a growing crop, which is cut and reproduced to furnish a continuous supply of timber. In a normal forest the cut would equal the estimated growth for any given period, but, since the normal forest is rarely found, the allowed cut is seldom the same as the growth. On over mature areas, it would exceed the estimated growth, but where the total volume is below normal and an excessive proportion of the area is bearing only young trees the cut should be less than the growth. The area cut, however, must be reproduced with the desired species, and if this will not take place naturally, it must be planted. This is a very brief statement of the usual conception of sustained yield management or management for perpetual forest crops.

This conception must be modified to meet the demands of our industrial conditions. The demand for wood rather than the theoretical allowed cut must determine the actual cut. During periods of wood shortage in the general market, it will usually be necessary to overcut the forest. At such times large profits usually result from the sale of manufactured products and the plants must not be handicapped by a shortage of raw material.

It is often impossible to buy all the extra wood desired in the open market and when possible, its cost will be abnormal. The forest under these circumstances must be overcut to provide the plant with wood at a reasonable cost.

After such periods the forest must be restored to normal condition as rapidly as possible. The cutover area must be planted if it has not been cut so as to reproduce naturally; also, partly grown timber should be purchased if opportunity offers; and wood should be purchased in the open market to conserve the overcut forest.

In the usual business cycle, these periods of high costs and large profits are followed by periods when it is possible to do all of these things, providing the money is available. Business has over extended itself and has to contract. Labor can be had for planting work at reasonable cost; poorly financed companies are forced to dispose of some of their stumpage, and wood can be purchased at lower prices. Reduced profits are the rule, however, at such times and unless some provision has been made in the preceeding period, funds may not be available to take advantage of these favorable conditions for replacing the overcut forest. For these reasons a portion of the large profits made during the preceeding period must be reserved in order to replace the forest. Such reserves should equal the probable cost of replacing the overcut portions of the forest and should be represented by liquid assets in order that they may be available when needed.

[1] Forester and Valuation Engineer.
[2] Certified Public Accountant, N. Y. and N. J.

Thus forest management involves financial management. The forester in charge of an industrial forest must think of his stand of timber and his financial reserves together and be an opportunist in playing one against the other.

Cost Versus Value

Cost should be the basis of timber accounting whether under destructive lumbering or sustained yield management. Cost is so important that it should not be lost sight of even when it does not represent value at any given time. Cost is a fact. Value is at best an estimate. Cost, when determined, should be held inviolate. If upon comparison, cost appears to be in excess of value, cost should be analyzed to determine whether items have been included which are not representative of cost. If value is greater than cost and it is desired to have the value appear on the records, a separate account, captioned "Timber Appreciation", should be set up reflecting the excess value over cost. The records will then show cost as well as value.

The supposition held by some that depletion does not take place under sustained yield management is based upon a theory which cannot here be accepted. As the old stands, or the older trees in the stand, are cut, their cost or value must be returned to the business. Any parts of such a stand which are retained as seed trees become a part of the cost of the future forest. The charging to operating expense of the cost of reproducing and growing the future forest is not equivalent to the depletion of the old stands. Such charges do not correctly show the portion of capital consumed when the old stands are cut.

The weakness of such a method is evident—the cost of the old forest continues in the accounts when it has been entirely replaced. Current operating expenses would be burdened with improper costs, which would not be accepted in determining net income for federal taxation. The method would not accord with sound accounting practise. The investment in the renewed forest would in all probability be stated at a figure below the actual cost of replacement. It might be, under rare circumstances, in excess of value. Under either circumstance an arbitrary value would be placed on the renewed forest that would certainly not represent true cost and, in all probability, not sound value either.

In order to make the application of these fundamentals more definite, the accounts through which they would be reflected on the accounting records will be discussed briefly. This discussion will cover only those accounts directly involved, but a complete set of double entry books is assumed, as well as the reader's knowledge of maintaining them.

Accounts

Under sustained yield management, it is evident that the land under the timber must be owned and represented in the investment. Since, however, the land remains continually in the business, while the timber is being constantly cut and replaced, it becomes necessary to separate the investment as between land and timber.

Land

This account should be charged with the allocated cost of the land owned or purchased, exclusive of the timber thereon. This allocated cost should reflect a conservative market value for comparable lands at date of purchase. The cost of land sold or otherwise disposed of will be credited to this account.

Timber

After the land cost has been allocated, the balance of the purchase price, if representing only timber, is the amount to be charged to the Timber account. Future purchases will be handled in a similar manner. The Timber account will be credited at cost for timber sold or destroyed, and, eventually, with the depletion.

The Timber account has been referred to above in the singular since there would usually be only one account in the general ledger, which would control accounts for each tract, block or compartment. These would be kept for convenience in a subsidiary ledger, the sheets of which could be especially ruled to provide columns for the quantity of timber and for such othed forest management data as required or desired. By this method the forest management and the accounting data are coordinated.

Depletion Reserve

The receipts from the sale of stumpage or other forest products manufactured from timber, represent in part a return of cost, plus expense of operation and the element of profit or loss. In order that the capital invested may be returned to the proprietors at some future time, it is necessary to set aside the cost of timber as it is cut. The unit cost of the cut is the ratio of the total cost to the total estimated stand of timber. This unit cost multiplied by the cut is a charge to Profit and Loss and a credit to an account captioned Depletion. This account is ordinarily shown on the liability side of a balance sheet. It may be shown on the asset side as a reduction from the amount carried in the Timber Account. Its purpose is to show at all times the cost of timber consumed in the conduct of the business enterprise. The difference between the amount reserved for depletion when correctly computed, and the cost shown in the Timber account discloses the remaining cost invested in Timber, providing that there has been no error in estimating quantity.

The above accounts are discussed from the standpoint of destructive lumbering. It is probable that the individual or subsidiary accounts would not represent the same areas under destructive lumbering that they should represent under sustained yield management. Under most conditions the simpler way of making the transition to the new accounts would be to continue the old accounts for depletion purposes until the original stand has been cut. In the meantime a survey of the forest would be made and the forest divided into natural units for sustained yield management purposes. New timber accounts representing each of these units would be set up and costs chargeable to the future forest crop would be charged to the accounts representing the areas on which the expenditures were incurred. The following example will illustrate this procedure.

We will assume that in the past year 60,000 cords have been cut on the North River drainage on lands which are represented in the records as the Brown Tract; that the average unit cost for the Brown tract is $3.26 per cord; that 5000 cords of pulpwood are left in the form of standing timber to furnish seed and advance growth for the next crop; that part of the area is already reproduced accidentally with natural young growth; that this young growth must be freed from a suppressing over story at a net cost of $300.00; and that part of the area must be planted at a cost of $2000.

The cost of operations on the Brown Tract necessarily must be charged with the cost of the 60,000 cords cut, at the average cost of $3.26, the total charge is $195,600; Depletion Reserve is credited with the same total for the purpose of setting aside the cost of the timber cut from the Brown Tract.

The North River drainage is a natural management unit and will be indicated in the records by a ledger account designated North River Block. This account will be charged with all costs applicable to the growing of the future crop. Consequenly it must be charged with the 5000 cords of wood, left in the form of seed trees and advanced growth at the average cost of $3.26 equaling $16,300.00. The Brown Tract should be credited with a like amount because it is no longer a part of the Brown Tract.

The cost of removing the suppressing overstory $300.00 and the cost of planting $2000.00 are elements of capital cost of the future forest; therefore, the North River Block will be charged with these costs, $2300.00; the corresponding credit will be applied to the account from which the capital is procured.

As other natural management units are cut over, from the Brown Tract or other tracts in the original forest, accounts

will be set up representing them following the procedure outlined. This process will continue until the original timber tracts have been cut and their accounts closed out in the record. The new accounts set up under this procedure will supplant the old accounts and reflect the cost of the growing forest. It is contemplated that the capital returned from the old forest in the form of depletion will be turned over and used in the continual process of reproduction. To the extent that it is insufficient, appropriation must be made from surplus or new capital brought into the business. If the conception of sustained yield management is to be completely carried out, the plant must be supplied with wood from the old forest and from such purchases as can be made, until the blocks first put under sustained yield management are mature and ready to cut. The forest will have been completely cut over, during this time, reproduced, and so organized that, if the working plan is carried out, mature timber will be continually available. The rotation, of the crop, or the number of years between cuts on any given area, will depend on local conditions and will be part of this working plan.

The results of one such survey are shown by the following:

"In 1923 the company had a complete forest survey made of 84,000 acres of lands, including lands which we had previously cut over and lands owned by farmers within the 84,000 acre block. These 84,000 acres, in addition to cut-over pine land, included hardwood creek bottoms, farm lands, and prairies. By far, the major portion of the territory was cut-over pine lands. This survey showed that there was an annual growth per acre of 220 feet board measure on the entire 84,000 acres, even though there was included in this acreage the hardwood bottoms, farm lands, and prairies. Based on this growth study survey, we began to acquire additional acreage of pine timberland to bring our holdings up to the point where we could expect to think seriously of perpetuating our operations.

Our calculations were based mainly on the hope of a perpetual sawmill operation. At that time, the pulp and paper possibilities of our country were but little considered We know now that our lands should produce a perpetual supply of pulp wood for a 150 ton pulp mill, although we are not so sanguine of the size of the sawmill that can be perpetuated."

"Before the directors of any lumber company owning standing timber can decide whether to cut and move on to other virgin fields or, as an alternative, to leave seed trees, a nucleus of a second cut (say trees under 15 inches in diameter at the stump), and to maintain a rigid woods fire control, they must first decide what is an adequate and satisfactory stumpage realization during the life of the virgin cut and what will be considered by them to be an adequate and satisfactory stumpage realization during the second cut and subsequent periods."

Timber Appreciation

Situations often arise making it advisable to have the balance sheets represent value as well as cost. Under such circumstances the Timber account may be debited with the determined excess over cost representing value and an account captioned "Surplus from Appreciation of Timber" credited with a like amount. An alternative method is to set up an entirely new account apart from the Timber account, which might be called "Timber Appreciation," to which the excess value over cost will be charged. The corresponding credit goes to Surplus from Appreciation of Timber. This procedure is recommended in order that original cost will not be disturbed. If an account such as this had been used before the days of the Federal income tax less difficulty would have been experienced in showing the value of the assets back of the business. Such an account is now used to reflect values allowed as of March 1, 1913 for purposes of Federal Taxation.

Realized Appreciation

The purpose of this account is to record appreciations in value as and when recovered. It has the same relation to the Timber Appreciation account that the Depletion account has to the Timber account. Realized Appreciation account records the return of *value* over cost while the Depletion account records the return of *cost*. As the timber is cut, cost and value of timber are recovered concurrently. The depletion unit thus is the ratio of the determined *value* to the total estimated stand of timber. The cut of timber computed on that basis becomes a charge of Operations or Profit and Loss. Depletion is credited only with *cost* of timber cut, the unit cost of which is ratio of *cost* to estimated stand, while the Realized Appreciation account is credited with the excess of value over cost.

Surplus from Timber Appreciation

As previously explained, when it is desirable to record value in addition to cost, the excess value is charged to a Timber Appreciation account. Provision must be made for the corresponding credit and this is accomplished by setting up and crediting the excess value to an account captioned Surplus from Timber Appreciation account. The excess value when realized is a part of true surplus segregated for the time in Realized Appreciation account.

We have explained the method of crediting value in excess of cost, as recovered, to Realized Appreciation account and the method may be followed until the entire value, including cost, has been recovered as a result of cutting the entire tract of timber. The amount then credited to Realized Appreciation, if correctly computed, will equal the amount in Timber Appreciation account. These accounts, having served their purpose, will be closed out and the *value* recorded having been realized finds its way into true surplus. This is accomplished by charging Realized Appreciation and crediting Timber Appreciation and further by charging Surplus from Timber Appreciation and crediting Surplus with a corresponding amount. If it is desired the value realized over cost may be transferred to Surplus at the end of each accounting period, by following the method outlined. The original timber account showing cost and the depletion account covering the particular tract would have also served their purpose and theoretically the amounts in each account should equal each other. A charge is made to Depletion and a corresponding credit to Timber, thus, the entire investment in timber plus value has been recovered.

Replacement Reserve

Cases arise where a company is forced to part with some of its Timber lands for a consideration and it is desired to use the entire consideration to replace the timber taken. The consideration may be in excess of cost.

For example, suppose that the state under eminent domain proceedings took over for public park purposes a tract of timber land which had cost $50,000 and for which the company was awarded $60,000. A Replacement Reserve account would be set up in order that the money received would be earmarked and segregated for the specific purpose of replacing the timber condemned. The entries to be made would be a charge to cash of $60,000, and credits to Timber and Land of $50,000, and to Replacement Reserve of $10,000. Surplus would then be charged $50,000 and the Replacement Reserve credited with a like amount. Thus the whole $60,000 would be set apart for the replacement of the timber taken. As timber is purchased for replacement, Timber and Land accounts would be charged and cash, credited with the purchase price. When the entire $60,000 has been expended the Replacement Reserve would be debited and Surplus credited, since the Replacement Reserve account has fulfilled its purpose. Under sustained yield management, replacement reserve accounts should be used to set aside funds for replacement of stands overcut during periods of the high wood prices previously discussed.

Special Issues

In the above discussion, established methods of handling the principal timber accounts have been followed in most instances. Some expenditures, however, involve special consideration.

Cost of Planting and Nursery

In the case of a nursery conducted solely as a part of the replacement program, on timber lands owned by the company, the total expenditures are properly a cost of the growing timber and are charged to the timber account. Separate accounts should be maintained reflecting the cost of the nursery stock in order that the proper charge to Timber account may be made. The maintenance of this account showing cost will be of value should it become desirable or necessary to sell any of the nursery stock to outsiders.

Carrying Charges

The Bureau of Internal Revenue in its Income Tax Regulations has clearly defined carrying charges as follows:

"The term 'carrying charges' include interest, taxes and similar items paid on account of unproductive property. The theory upon which carrying charges (in the case of unproductive property) are considered as properly chargeable to capital account is that the payments are actually made out of the capital funds since there is no income out of which to make the payments."

The accepted accounting practice is to capitalize expenditures made in carrying property. This applies only to expenditures made and not to theoretical interest or other charges not actually paid. However, a few accountants attempt to justify the capitalization of theoretical costs.

Foresters approach this problem from the standpoint of cost of producing the new forest. They do not make a distinction between the interest actually paid and the constructive interest computed on the unborrowed capital investment. Thus the foresters usually think of carrying charges as including constructive interest. In effect they would capitalize all interest and other carrying charges.

The earlier income tax laws contained provision applicable to items properly chargeable to capital account and the Bureau of Internal Revenue held that such items could not be capitalized for the reason that interest and taxes were allowed as deductions from gross income in determining net income. The 1929 Regulations of the Bureau provide that "the cost or other basis of the property shall be properly adjusted for any expenditure, receipt, loss or other item properly chargeable to capital account, including xxxx carrying charges, such as taxes on unproductive property. Where the taxpayer has elected to deduct carrying charges in computing net income, or used such charges in determining his liability for filing returns of income in prior years, the cost or other basis may not be increased by such items in computing the gain or loss from the subsequent sales of the property.

Sustained yield management justifies the capitalization of carrying charges and while these items are deductible in determining net income for purpose of federal taxation under the present laws, any advantage so obtained would necessarily mean that the future stand of timber is not being charged with costs directly incurred in producing it.

Cost of Protection

The discussion pertaining to carrying charges applies to cost of protecting the growing forest. Bush burning required by law is a special phase of the protection problem and where the law is a sound and wise protection measure expenditures in connection therewith are likewise capital charges. Where bush burning is not necessary for protection purposes, and especially where it is not good silviculture, but is imposed by game and hunting interests, the cost is an annual expense and should not be capitalized.

Conclusion

In this article we have discussed the purpose of various timber accounts and their application to sustained yield managment when such a policy is adopted.

The functions of the accounts are primarily to record all the cost incurred in growing the forest which is to supply timber at a future date for the needs of the business. Other functions of the accounts are to supply current management data which will be uniform and make it available over a period of years for purposes of comparison.

An ideal situation, rarely found, is one where the managing directors have a clear vision of the present and future effect on capital and income of the adoption of the sustained yield management program. In carrying out a program of this nature they must depend on the statistics supplied by their chief accountant and head Forester. The accountant in addition to a thorough training in the technique of accounts must have experience in accounting for timber operations, and a thourough comprehension of sustained yield management. The forester must also have a clear understanding of the fundamental principals of accounts and finance. Working together with sustained yield management in mind, they will have available, uniform and comparable date for the proprietors in determining the policy to be pursued by the business.

Policies are sometimes adopted as an experiment and expenses in connection therewith are charged to Profit & Loss. When any policy has proven sufficiently successful to indicate its soundness, expenditures which contribute to the growing and formation of the future forest will be capitalized. The forester will study these experiments and use them for determining his own policies; but, unless he understands accounts and finance and co-operates with the accountant, there will not be a proper distribution and segregation of expenditures, and the accounts will fail of their purpose and usefulness. The forester will then find that the transactions as recorded in the accounts do not sustain the soundness of the policies which he advances. Thus the accounts may declare sustained yield management a failure when it is actually sound.

L. J. Arnold, Manager of the Crosett Timber Company, in a lecture delivered to the students of Yale Forest School, makes the following statement regarding the value of accounting:

"It is inconceivable," he said, "that any man could ever reach a high place in the business world without that sense of values, that bird's-eye view of commercial affairs, that power to analyze and measure business forces which result from a complete understanding of the principles of accounting."

Goes With Hawley Pulp & Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 5, 1929.—George W. Houck, widely-known in paper mill circles of the Miami Valley, and the son of R. T. Houck, Sr., of the Mead Pulp and Paper Company, has accepted the position of executive vice-president of the Hawley Paper and Pulp Company, at Portland, Ore.

This is a large enterprise, involving an expenditure of more than $10,000,000.

Four machines are operated in the mills on white print and merchandising paper.

Mr. Houck will move his family West at once. His decision to remain in that region followed a visit to Portland. Mr. Houk considers the opportunities to be of the best in the western country. He is an active, energetic young man and his appointment to the western post makes him one of the youngest paper mill executives in the country.

Zellerbachs Arrange for Hemlock Waste

PORTLAND, Ore., August 2, 1929.—The Zellerbach interests have arranged with the Nimpkish Timber Company, Ltd., of Vancouver, B. C., to take the hemlock waste from the latter company's sawmill at Inglewood, B. C. Zellerbach's will install a chip-cutting machine which will be ready for operation October 1. The Washington Pulp and Paper Company, Port Angeles, Wash., a Zellerbach subsidiary, has arranged to get hemlock chips from Wood & English, Ltd., Inglewood, B. C., according to Fred J. Wood, president of the E. K. Wood Lumber Company, Anacortes, Wash., a member of the Wood & English Company.

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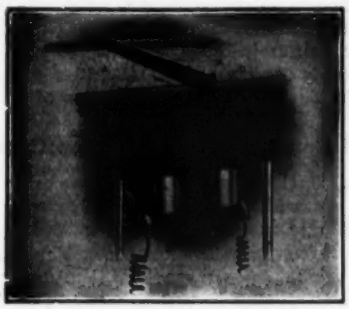

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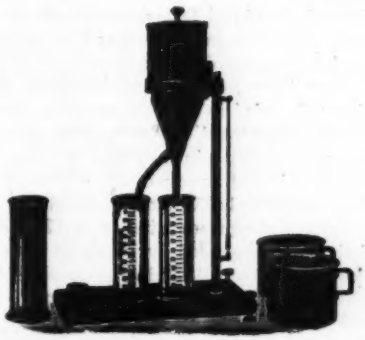

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UNITED STATES CANADA

Obituary

Isadore J. Wilder

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 5, 1929.—With the passing of Isadore J. Wilder, the Philadelphia paper trade suffered the loss of one of its most popular younger associates. The younger member of the firm of Wilder Brothers, 12th and Brown streets, wrapping paper dealers, died at the University of Pennsylvania Hospital last Thursday following a ten days' illness and operation for appendicitis. He was stricken at his home with an acute attack of the malady and was immediately removed to the hospital and operated on. He was supposed to be one his way to recovery when complications set in and he died suddenly on Thursday morning.

The junior member of the firm, who was 37 years of age, was a loyal associate of the Philadelphia Paper Trade Association and had a wide circle of friends in the Quaker City and among manufacturers. His industry, coupled with that of his brother, Charles A. Wilder, promoted the successful establishment of the Wilder Brothers business, founded in 1915, after having been associated with the Paper Manufacturers' Company on its sales staff. Both of the members were untiring in their zeal in promoting the welfare of the paper trade and its organization, actively participating in its work here and with the National association.

A special committee of representatives of the Philadelphia Paper Trade Association was appointed by President Simon Walter to attend the obsequies and funeral services at the Rosenburg Funeral Parlors on Friday. Those attending on the association committee were Norbert A. Considine, Paper House of Pennsylvania; T. H. B. Smythe, J. L. N. Smythe Company; Harry A. Adler, Huff Paper Company; Thomas F. Kennedy, S. Walter, Inc.; W. S. Wilcox, Wilcox, Walter, Furlong Company, and President Walter. The young man was a member of the Masonic Order and was affiliated with several prominent clubs in this city. Surviving are his widow and two minor children.

Frank Sammett

[FROM OUR REGULAR CORRESPONDENT]

DALTON, Mass., August 6, 1929.—Frank Sammett, 48, head of the chemistry department of Crane & Co., Inc., paper mills died last Thursday morning after a year and a half of illness. He had been head chemist for 14 years. He was born in Boston and after graduating from the Massachusetts Institute of Technology in 1903 was employed in paper and leather laboratories in Washington, D. C. It was there he met the late Sen. W. Murray Crane who induced him to come to Dalton to take charge of the chemistry work. He was well known in the paper industry as one thoroughly acquainted with the chemistry of papermaking. He leaves besides a widow, two children, Thornton and Adrian, and a brother and sister in Boston. The funeral was held Saturday afternoon with burial in the Main street cemetery.

Forest Taxation To Be Discussed

Governor Franklin D. Roosevelt's recent appointment of Dean Franklin Moon as a delegate to represent the State of New York at the 22nd annual conference of the National Tax Association at Saranac Lake, N. Y., September 9-13 is an indication of the importance that forest taxation occupies today in the general tax problem, says the New York State College of Forestry at Syracuse University.

Dean Moon, who, by virtue of his position as head of the Forestry College at Syracuse, is in touch with forest taxation in New York as well as other sections of the United States. The appointment of foresters to attend the conference is an indication that Governor Roosevelt considers this phase of taxation in its true importance as an economic factor. Many laws have been passed in New York tending to relieve the burden of taxation on the owner of forests, particularly as an inducement to reforestation and the scientific growing of forest crops, but it appears that no satisfactory measure, thus far, has been devised. Various agencies and investigators have devoted considerable time and money to the subject without producing any adequate system for taxing growing forests.

The Federal Government is deeply concerned in this matter. Under the Clark-McAry Act, the forest taxation problem is being investigated, but the field is so extensive and varying factors so numerous that the work will require a number of years. It is believed in many quarters that the tax on forest land, as it is administered at present, is one of the great obstacles to the application of scientific forestry in this country. The appointment of foresters to participate in the annual conference of the National Tax Association is assurance that this matter will be given due consideration looking toward the final solution of the problem.

Said To Have Raised Rate on Casein

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 7, 1929.—It was reported here the latter part of last week that the Senate Finance Committee had raised the tariff rate on casein from 2½ to 3½ cents per pound. The statement, however, was not made public officially by the committee.

Attention has been called by various members of the committee that in executive session at this time the committee is not making its final check up on the rates which are being changed over the House bill, but that a final vote is still to be taken before the bill goes to the Senate at which time some of the changes being made at this time will be still further changed.

While the Finance Committee is making every effort to complete the bill for the Senate at as early a date as possible, it is still not believed that it will be ready for the Senate when it convenes on August 19.

State Fairs To Have Forestry Exhibits

Forestry demonstrations and exhibits will be shown at the State Fair and County Fairs this year by the New York State College of Forestry at Syracuse University: Hornell, August 20-23; Syracuse State Fair, August 26-31; Brookfield, September 2-6; Altamont, September 9-14; Albion, September 18-21, and Palmyra, September 26-28.

The exhibit of the Forestry College will not only show the various methods of planting young forest trees, but will provide information relative to the growing of forests and the management of woodlots including fire protection and the harvesting and marketing of timber crops. Illustrations and printed matter on this subject will be available in connection with these exhibits.

A new feature of the forestry exhibit at the State Fair will be a miniature model of a pulp and paper mill in operation.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

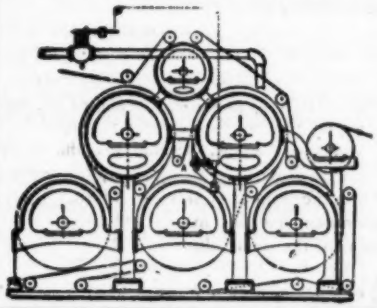
WASHINGTON, D. C., August 7, 1929.—The Government Printing Office has received the following bids for 60,000 pounds of manila calendered tag board in 23½ inch rolls: R. P. Andrews Paper Company, at 6.94 cents per pound; Barton, Duer & Koch Paper Company, 7.2 cents; Whitaker Paper Company, 6.97 cents; and Mathers-Lamm Paper Company, 7.84 cents.

The Printing Office also received the following bids for 10,000 pounds of salmon and 10,000 pounds of pink, same: R. P. Andrews Paper Company, at 7.45 cents per pound; Barton, Duer & Koch Paper Company, 7.84 cents; Whitaker Paper Company, 7.825 cents, and Mathers-Lamm Paper Company, 8.34 cents.

An Attractive Calendar

An effective reminder that "Tempus Fugit" is shown by a very attractive 1930 Calendar received from Lester & Wasley, Inc., of Norwich, Conn. The reproduction in colors is taken from the original painting "Home Sweet Home" by Louis Seybold and is mounted on deckle edged stock produced by their new deckle edge machine.

The Pickles Drying Regulator



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Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 3, 1929

SUMMARY

Cigarette paper ..... 42 cs.
Wall paper ..... 61 bls., 28 cs.
Paper hangings ..... 23 bls., 30 cs.
News print ..... 1,565 rolls
Printing paper ..... 68 rolls, 81 cs.
Wrapping paper ..... 16 rolls, 61 bls., 64 cs.
Decalcomania paper ..... 58 cs.
Filter paper ..... 7 cs.
Tissue paper ..... 132 cs.
Drawing paper ..... 14 rolls, 46 cs.
Parchment paper ..... 17 bls.
Transparent grease proof paper ..... 137 cs.
Writing paper ..... 5 cs.
Note paper and envelopes ..... 22 bls., 4 cs.
Cardboard ..... 253 cs.
Surface coated paper ..... 43 cs.
Baryta coated paper ..... 59 cs.
Copy paper ..... 20 cs.
Insulating paper ..... 67 cs.
Aluminum paper ..... 28 cs.
Metal paper ..... 2 cs.
Photo paper ..... 13 cs.
Caoutchouc paper ..... 2 cs.
Colored paper ..... 7 cs.
Pith paper ..... 1 cs.
Bristol boards ..... 5 cs.
Mould paper ..... 2 cs.
Straw board ..... 434 pkgs.
Miscellaneous paper ..... 236 rolls, 41 bls., 483 cs.

CIGARETTE PAPER

Liggett & Myers Tobacco Co., Paris, Havre, 17 cs.
Standard Products Corp., Paris, Havre, 25 cs.

WALL PAPER

W. D. Collier, New York, Hamburg, 2 cs.
——, New York, Hamburg, 59 bls.
Guaranty Trust Co., New York, Hamburg, 14 cs.
Happel & MacAvoy, New York, Hamburg, 1 cs.
F. J. Emmerich, New York, Hamburg, 2 cs.
A. C. Dodman, Jr., Inc., Albertic, Liverpool, 6 bls.
Thomas & Pierson, Majestic, Southampton, 2 bls.
Stone Gross Co., Majestic, Southampton, 2 cs.
R. E. Thibout, Inc., Milwaukee, Hamburg, 6 cs.
Globe Shipping Co., Milwaukee, Hamburg, 3 bls.
Stone Gross Co., Berengaria, Southampton, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Minnewaska, London, 10 cs., 23 bls.
J. E. Bernard & Co., Paris, Havre, 5 cs.
E. L. Kaufman, Majestic, Southampton, 11 cs.
Whiting & Patterson Co., Inc., Majestic, Southampton, 4 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Dresden, Bremen, 772 rolls.
H. Reeve Angel & Co., Inc., Regnhildsholm, Helsingfors, 544 rolls.
Journal of Commerce, Regnhildsholm, Helsingfors, 65 rolls.
Perkins Goodwin & Co., Milwaukee, Hamburg, 184 rolls.

PRINTING PAPER

E. Dietzgen & Co., Inc., Statendam, Rotterdam, 52 cs.
——, New York, Hamburg, 68 rolls.
F. L. Kramer & Co., American Merchant, London, 3 cs.
Walker Goulard Plehn Co., Hallaren, ——, 26 cs.

WRAPPING PAPER

T. Barrett & Son, Drottningholm, Gothenburg, 61 bls.
A. Johnson & Co., Inc., Drottningholm, Gothenburg, 16 rolls.
Japan Paper Co., Arabic, Antwerp, 3 cs.
Birn & Wachenheim, Arabic, Antwerp, 45 cs.
C. Steiner, Milwaukee, Hamburg, 16 cs.
Fidelity Trust Co., Thuringia, Hamburg, 59 rolls.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Albertic, Liverpool, 20 cs. (duplex); 29 cs. (simplex).
C. W. Sellers, Thuringia, Hamburg, 9 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 7 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., Albertic, Liverpool, 6 cs.
F. C. Strype, Albertic, Liverpool, 6 cs.
F. B. Vandegrift & Co., Albertic, Liverpool, 2 cs.
Old Master Paper & Pulp Corp., Thuringia, Hamburg, 118 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Carmania, London, 5 cs.
Keuffel & Esser Co., Carmania, London, 1 cs.
Keuffel & Esser Co., Milwaukee, Hamburg, 14 rolls, 40 cs.

PARCHMENT PAPER

Walker Goulard Plehn Co., Thuringia, Hamburg, 17 bls.

TRANSPARENT GREASE PROOF PAPER

Central Hanover Bank & Trust Co., New York, Hamburg, 25 cs.
Central Hanover Bank & Trust Co., Milwaukee, Hamburg, 84 cs.
Central Hanover Bank & Trust Co., Thuringia, Hamburg, 28 cs.

WRITING PAPER

Japan Paper Co., Paris, Havre, 1 cs.
Marshall Field & Co., Paris, Havre, 2 cs.
American Express Co., Liberty, Havre, 2 cs.

NOTE PAPER AND ENVELOPES

Jas. A. Hearn & Son, Inc., Albertic, Liverpool, 4 cs., 22 bls.

CARD BOARD

American Express Co., Milwaukee, Hamburg, 253 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Dresden, Bremen, 22 cs.
Gevaert Co. of America, Arabic, Antwerp, 21 cs.

BARYTA COATED PAPER

Globe Shipping Co., Dresden, Bremen, 59 cs.

COPY PAPER

Whit Paper Works, Asuka Maru, Kobe, 20 cs.

INSULATING PAPER

International Standard Electric Corp., Asuka Maru, Osaka, 67 cs.

ALUMINUM PAPER

Catty Foil Co., Dresden, Bremen, 28 cs.

METAL PAPER

Universal Car Loading Co., New York, Hamburg, 2 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 9 cs.
Draeger Shipping Co., Milwaukee, Hamburg, 1 cs.
J. J. Gavin, Berengaria, Southampton, 3 cs.

CAOUTCHOUC PAPER

American Express Co., Milwaukee, Hamburg, 2 cs.

COLORED PAPER

Meadows Wye & Co., New York, Hamburg, 1 cs.
Borden Riley Paper Co., Arabic, Antwerp, 5 cs.
P. H. Petry & Co., Milwaukee, Hamburg, 1 cs.

PITH PAPER

Nosawa & Co., Asuka Maru, Keelung, 1 cs.

BRISTOL BOARDS

Keuffel & Esser Co., Carmania, London, 5 cs.

MOULD PAPER

Phoenix Shipping Co., Statendam, Rotterdam, 2 cs.

STRAW BOARD

A. B. Massa Corp., Statendam, Rotterdam, 434 pkgs.

MISCELLANEOUS PAPER

Globe Shipping Co., Statendam, Rotterdam, 112 cs.
H. Lange, Dresden, Bremen, 2 cs.
P. J. Schweitzer, New York, Hamburg, 2 cs.
Rohner Gehrig & Co., New York, Hamburg, 7 cs.
Standard Products Corp., De Grasse, Havre, 127 cs.
D. S. Walton Co., Drottningholm, Gothenburg, 31 rolls, 10 bls.
Wilkinson Bros. & Co., Inc., Drottningholm, Gothenburg, 86 rolls, 31 cs.
H. Reeve Angel & Co., Inc., Drottningholm, Gothenburg, 103 cs.
Japan Paper Co., Drottningholm, Gothenburg, 5 cs.
J. E. Andersen, Drottningholm, Gothenburg, 5 cs.
Keller Dorian Paper Co., Paris, Havre, 9 cs.
Standard Products Corp., Paris, Havre, 61 cs.
P. J. Schweitzer, Paris, Havre, 17 cs.
M. M. Cohen, Thuringia, Hamburg, 119 rolls, 31 bls.
Steffens Jones Co., Asuka Maru, Kobe, 2 cs.

RAGS, BAGGINGS, ETC.

Manufacturers Trust Co., Ida Trieste, 19 bls. rags.
Guaranty Trust Co., Exermont, Palermo, 49 bls. rags.
V. Galaup, Exermont, Naples, 385 bls. rags.
D. I. Murphy, Exermont, Leghorn, 85 bls. rags.
A. W. Fenton, Inc., Dresden, Bremen, 52 bls. rags.
Van Oppen & Co., Dresden, Bremen, 30 bls. cotton waste.
Irving Trust Co., Dresden, Bremen, 92 bls. cotton waste.
C. R. Spence & Co., Cameronia, Glasgow, 43 bls. rags.
Equitable Trust Co., Oscar II, Copenhagen, 156 bls. rags; 18 bls. waste.
Castle & Overton, Inc., Hagen, Hamburg, 52 bls. jute.
D. M. Hicks, Inc., Innoko, Antwerp, 295 bls. flax waste.
E. Butterworth & Co., Inc., Innoko, Antwerp, 130 bls. flax waste
Trust Co. of America, Albertic, Liverpool, 47 bls. bagging.
Brown Bros. & Co., Balsam, Dublin, 92 bls. paper stock.
Anglo South American Trust Co., Balsam, Dublin, 113 bls. rags.
Lehr Manfg. Co., Glasgow Maru, Oran, 281 bls. rags; 166 bls. bagging.
S. Birkenstein & Son, Glasgow Maru, Oran, 280 bls. rags.
V. Galaup, Coahoma County, Rotterdam, 5 bls. rags.
Castle & Overton, Inc., Coahoma County, Rotterdam, 41 bls. bagging.
E. Mayer, Coahoma County, Rotterdam, 7 bls. rags.
Overton & Co., Coahoma County, Rotterdam, 128 bls. bagging.
Gallagher & Ascher, Coahoma County, Rotterdam, 54 bls. rags.
Castle & Overton, Inc., Liberty, Havre, 110 bls. rags; 100 bls. bagging.
American Express Co., Liberty, Havre, 5 bls. rags.
V. Galaup, Liberty, Havre, 21 bls. rags.
V. Galaup, Liberty, Dunkirk, 40 bls. rags.
E. J. Keller Co., Inc., Liberty, ——, 63 bls. rags.
E. J. Keller Co., Inc., Exchester, ——, 130 bls. rags.
P. Berlowitz, Fabian, Oran, 94 bls. rags.
National City Bank, Fabian, Oran, 310 bls. rags.
New York Trust Co., Vermont, Havre, 13 bls. rags.
National Bank of Commerce, Vermont, Havre, 184 bls. rags; 56 bls. bagging.
Equitable Trust Co., Vermont, Havre, 86 bls. rags.
E. J. Keller Co., Inc., Vermont, ——, 153 bls. rags.
Manufacturers Trust Co., Thuringia, Hamburg, 149 bls. rags.
Darmstadt Scott & Courtney, Asuka Maru, Osaka, 70 bls. rags.
Castle & Overton, Inc., Minnewaska, London, 28 bls. rags.

OLD ROPE

Brown Bros. & Co., Statendam, Roterdam, 75 coils.
Brown Bros. & Co., Liberty, Havre, 111 coils.
Brown Bros. & Co., Liberty, Dunkirk, 242 coils.
Brown Bros. & Co., Thuringia, Hamburg, 32 bales.
International Purchasing Co., Exermont, Genoa, 210 coils.
S. Birkenstein & Son, Glasgow Maru, Oran, 48 coils.

CASEIN

Chemical National Bank, Oakspring, B. Ayres, 417 bags, 25,020 kilos.
D. C. Andrews & Co., Thuringia, Hamburg, 154 bags, 6,922 kilos.

WOOD PULP WADDING

Birn & Wachenheim, Statendam, Rotterdam, 50 bls.

WOOD PULP

Bulkley Dunton & Co., Copenhagen, ——, 11,925 bls. wood pulp, 2,375 tons.
J. Andersen & Co., Copenhagen, Stugsund, 1,000 bls. sulphite, 200 tons.
Pagel Horton & Co., Inc., Copenhagen, Pitea, 1,500 bls. sulphate, 250 tons.
Chatham & Phoenix Natl. Bank, Copenhagen, Pitea, 600 bls. sulphate, 100 tons.
Castle & Overton, Inc., Statendam, Rotterdam, 162 bls. wood pulp.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 175 bls. sulphite.
Johanson Wales & Sparre, Inc., Drottningholm, Gothenburg, 299 bls. dry soda pulp.
Price & Pierce, Ltd., Drottningholm, Gothenburg, 1,000 bls. wood pulp.
Bulkley Dunton & Co., Drottningholm, ——, 300 bls. wood pulp.

(Continued on page 72)

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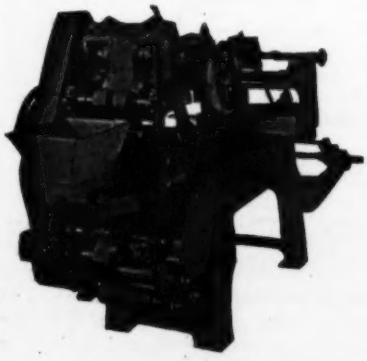

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Special Machinery Designed and Built

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1702 Robinson St., South Bend, Ind.

Imports of Paper and Paper Stock

(Continued from page 70)

Atterbury Bros., Inc., Oscar II, Oslo, 500 bls. wood pulp, 100 tons.
Bank of New York, Oscar II, Oslo, 300 bls. sulphite, 50 tons.
O. E. Kiaer, Ragnhildsholm, Stockholm, 300 bls. wood pulp.
——, Hallaren, ——, 1,097 bls. wood pulp.
G. S. Kerr & Co., Ltd., Gunny, St. Albans, 1,688 cords wood pulp.
Castle & Overton, Inc., Milwaukee, Hamburg, 541 bls. wood pulp, 81 tons.
——, Milwaukee, Hamburg, 365 bls. wood pulp, 73 tons.
Castle & Overton, Inc., Thuringia, Hamburg, 1,242 bls. wood pulp, 186 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Ragnhildsholm, Kotka, 129 bls., 259 rolls.
Lagerloef Trading Co., Hallaren, Kotka, 105 bls.

WOOD FLOUR

State Chemical Co., Statendam, Rotterdam, 420 bags.
A. Kramer & Co., Inc., Statendam, Rotterdam, 300 bags.
The Burnett Co., Drottningholm, Gothenburg, 339 bags.
The Burnett Co., Coahoma County, Rotterdam, 250 bags, 10,000 kilos.

PHILADELPHIA IMPORTS

WEEK ENDING AUGUST 3, 1929

Katzenstein & Keene, Inc., Ida, Bari, 118 bls. rags.
Congoleum Nairn Co., Exermont, Naples, 143 bls. rags.
Neidich Process Co., Regnshildsholm, Helsingfors, 82 cs. tissue paper.
——, Regnshildsholm, Helsingfors, 11,296 bls. wood pulp.
Lagerloef Trading Co., Regnshildsholm, Helsingfors, 153 bls. wood pulp boards.
Chase National Bank, Exchester, Algiers, 64 bls. rags; 59 rolls old rope.
Chase National Bank, Vermont, Havre, 98 bls. rags.
Tradesmans National Bank, Vermont, Havre, 100 bls. rags.
Castle & Overton, Inc., Vermont, Havre, 26 bls. rags.
W. Schall & Co., Vermont, Havre, 61 bls. rags; 37 bls. old rope.
Philadelphia National Bank, Vermont, Dunkirk, 101 bls. rags.
E. J. Keller Co., Inc., West Amargosa, ——, 112 bls. rags.
Castle & Overton, Inc., City of Alton, Holland, 2,370 bls. wood pulp.
Castle & Overton, Inc., Holger, Germany, 230 bls. rags.
Castle & Overton, Inc., Bristol City, England, 86 bls. rags.
Castle & Overton, Inc., Manchurian Prince, Scotland, 375 bls. jute.

GALVESTON IMPORTS

WEEK ENDING AUGUST 3, 1929

Hutchins Sealy & Co., Ida, Venice, 184 bls. bagging.

BALTIMORE IMPORTS

WEEK ENDING AUGUST 3, 1929

Pagel Horton & Co., Inc., Copenhagen, Pitea, 2,400 bls. sulphate, 400 tons.
J. Andersen & Co., Copenhagen, Stugsund, 1,000 bls. wood pulp, 200 tons.
Bulkley Dunton & Co., Copenhagen, ——, 1,875 bls. wood pulp, 375 tons.
National City Bank, Exermont, Palermo, 138 bls. rags.
Congoleum Nairn Co., Exermont, Naples, 206 bls. rags.
Congoleum Nairn Co., Exermont, Leghorn, 273 bls. rags.
Congoleum Nairn Co., Exermont, Genoa, 181 bls. rags.
Congoleum Nairn Co., Exermont, Marseilles, 310 bls. rags.
W. H. Masson, Exermont, Marseilles, 57 bls. old rope.
Congoleum Nairn Co., Innoko, Antwerp, 1,078 bls. rags; 340 bls. bagging.
S. Shapiro & Son, Innoko, Antwerp, 31 bls. rags.
National City Bank, Innoko, Antwerp, 456 bls. rags.
Perkins Goodwin & Co., Ragnshildsholm, Ortviken, 1,750 bls. sulphite.
Johanson Wales & Sparre, Inc., Gagnhildsholm, Soraker, 3,925 bls. sulphite.
Scandinavian Pulp Agency, Inc., Ragnshildsholm, Fagervik, 3,775 bls. sulphite.
Perkins Goodwin & Co., Ragnshildsholm, Fagervik, 750 bls. sulphate.
Katzenstein & Keene Inc., Liberty, Dunkirk, 471 bls. rags.
Katzenstein & Keene, Inc., Liberty, Havre, 414 bls. rags.
Congoleum Nairn Co., Liberty, Havre, 67 bls. rags.
National City Bank, Vermont, Havre, 75 bls. rags.
National City Bank, Vermont, Dunkirk, 662 bls. rags; 60 bls. bagging.
Castle & Overton, Inc., City of Alton, Holland, 680 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING AUGUST 3, 1929

Bird & Stone, Romsdalshorn, Barcelona, 193 bls. rags.
——, Hallaren, Kotka, 2,032 bls. sulphate.
——, Hallaren, Viborg, 306 bls. sulphite.
Stora Kopperberg Corp., Hallaren, Skutskar, 650 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Hallaren, Skutskar, 525 bls. wood pulp.
Perkins Goodwin & Co., Hallaren, Sundsvall, 1,375 bls. sulphite.
Johanson Wales & Sparre, Inc., Hallaren, Sundsvall, 375 bls. sulphite.
Bulkley Dunton & Co., Hallaren, ——, 3,375 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING AUGUST 3, 1929

Darmstadt Scott & Courtney, Innoko, Antwerp, 373 bls. bagging.
E. Butterworth & Co., Inc., Innoko, Antwerp, 242 bls. bagging.
Darmstadt Scott & Courtney, Innoko, Antwerp, 150 bls. rags.
British American Tobacco Co., Innoko, Antwerp, 52 cs. printed cigarette wrappers.

PORTLAND IMPORTS

WEEK ENDING AUGUST 3, 1929

Stora Kopperberg Corp., Hallaren, Skutskar, 2,500 bls. wood pulp.
Perkins Goodwin & Co., Hallaren, Sundsvall, 500 bls. sulphite.
M. Gottesman & Co., Inc., Hallaren, Sundsvall, 1,740 bls. sulphite.
M. Gottesman & Co., Inc., Hallaren, Gothenburg, 1,000 bls. wood pulp.
——, Hallaren, Kotka, 2,440 bls. wood pulp.
——, Hallaren, Viborg, 7,092 bls. wood pulp.

Committee for Washington Meeting

The names of several members of the committee for the Washington meeting of the Technical Association of the Pulp and Paper Industry were inadventently omitted in the list published in last week's PAPER TRADE JOURNAL. The members of the committee are as follows:

H. R. Harrigan, District of Columbia Paper Mfg. Co., Chairman.
G. W. Coggeshall, Industrial Research Laboratories.
G. K. Hamil, U. S. Bureau of Efficiency.
M. S. Kantrowitz, Government Printing Office.
J. M. Krauss, District of Columbia Paper Mfg. Co.
R. R. Machmer, Government Printing Office.
E. O. Reed, Government Printing Office.
B. W. Scribner, Bureau of Standards.
M. B. Shaw, Bureau of Standards.
R. H. Simmons, Government Printing Office.
D. A. Smith, District of Columbia Paper Mfg. Co.
O. G. Strieter, Bureau of Standards.
L. B. Tucker, Government Printing Office.
C. J. West, National Research Council.

Cellophane Prices Reduced

Effective August 1, 1929, the Du Pont Cellophane Company announces a substantial price reduction on Cellophane, both regular and moistureproof. It is the seventh reduction since domestic manufacture was started by the Du Pont Company in 1924 and the price now is less than 40 per cent of what it was at that time.

This period has seen the development and perfection of moistureproof Cellophane, which has won an important place in the candy, baking, meat, fish, cigar and other industries. It is expected that the lower price will lead to more widespread use of this transparent material among manufacturers in all fields.

Morristown Terminal Incorporates

[FROM OUR REGULAR CORRESPONDENT]

MORRISTOWN, N. Y., August 5, 1929.—A certificate of incorporation has been filed under state laws by the Morristown Terminal Corporation for the purpose of dealing in timber, pulpwood, paper and other products. The concern plans to construct wharves and docks to handle materials from this port. The capital stock consists of 3,000 shares without par value. Directors include James F. Campbell, Victor Baron and J. M. Gamble, all of Watertown.

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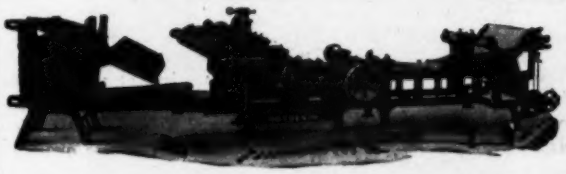

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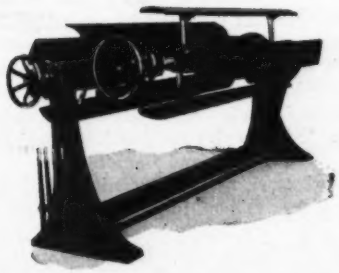

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 7, 1929.

Trading in the local paper market was moderately active. The various standard grades of paper are mostly in seasonal demand. Inquiries for future account are fairly satisfactory for the time of the year. Sales forces of the leading paper organizations are looking forward to the autumn campaign with confidence. Prices are generally holding to schedule and shading is infrequent.

The outlook for the news print industry is more encouraging than for some time past. Circulations of the principal daily and Sunday newspapers are reported to be increasing while record advertising activity is predicted for the closing months of the year. Stocks at the mills are not excessive and prices have been stabilized, both in Canada and the United States.

Some improvement was noticed in the paper board situation and while prices are still unsatisfactory at present a firmer trend is looked for in some quarters. The fine paper market continues steady, with prices unchanged. Demand for the various grades of coarse paper is well up to average for the season. Wrapping paper continues to move in good volume.

Mechanical Pulp

The ground wood market is exhibiting a strong undertone. Due to continued dry weather the output of domestic and Canadian mills has been curtailed and, consequently, offerings are limited and prices steady to firm. Production of mechanical pulp has also been curtailed abroad and quotations on imported ground wood are holding to schedule without difficulty.

Chemical Pulp

Considerable strength was displayed by several grades of chemical pulp during the past week, especially imported Mitcherlich unbleached, which is now quoted at from $2.80 to $3.25, a slight advance. Strong unbleached sulphite continues in a sound position, with producers booked well ahead. Kraft pulp is also in improved request. Other grades are practically unchanged.

Old Rope and Bagging

The old rope market was moderately active. Both domestic and imported manila rope continued in excellent request and the recently advanced prices are being maintained, in most instances. Mixed strings are moving in fair volume. Most of the business transacted in the bagging market was along routine lines. Roofing bagging is steady, but scrap and gunny are rather quiet.

Rags

With some paper mills closed down for annual repairs at present, the domestic rag market was rather quiet during the past week. The lower grades of cotton rags were fairly active and the higher grades were in seasonal request. Roofing rags are moving in fairly satisfactory volume. The foreign rag market is quiet although there are a fair number of inquiries around for future business.

Waste Paper

The various grades of paper stock are not arousing much interest from the paper mills. The board mills are not operating at full schedule and the lower grades of paper used by this branch of the industry are only moving in moderate volume. Nevertheless, mixed paper and folded news are fairly steady, with quotations holding to former levels. Book stock remains quiet and ledger stock slow.

Twine

Business in the twine market is marking time at present, due mainly to the usual mid-summer lull. The industry, however, is in a sound position for the time of year and a general expansion of trading in the Fall is confidently anticipated in some quarters. Prices are practically unchanged although there have been reports of concessions on extra large orders.

B. C. Pulp and Paper to Extend

MONTREAL, Que., August 5, 1929.—An expenditure of $1,000,000 plant additions is contemplated by the British Columbia Pulp and Paper Company, according to a dispatch from Vancouver. The company has two mills in operation at present, and the financial position of the company, with cash and investments at the end of 1928 totalling $700,000, is stated to be satisfactory.

British Columbia Pulp operates plants at Port Alice and Woodfibre, and supplies pulp for local paper companies and for shipment to Japan, United Kingdom and the United States. The company was formed in December, 1925, for the purchase of the Whalen Pulp & Paper Company; since that time expenditures totalling approximately $1,000,000 made on the mills have increased their capacity by about 20 per cent.

Wayagamack Active on Montreal Exchange

MONTREAL, Que., August 3, 1929.—While the leading news print stocks on the Montreal Stock Exchange have all been more or less active, particular attention has been paid during the past few days to the securities of the Wayagamack and Canada Power and Paper companies, and this has led to a renewal of the rumors that a merger between these two companies is not unlikely. Canada Power and Paper is at present in an exceptionally strong financial position owing to the scale of the Lawrence Power hydro-electric plant to the Shawinigan Water and Power Company. As a result it holds $10,800,000 in cash and 79,000 shares of Shawinigan stock, worth over $7,000,000. It is said that $125 per share would be the price for Wayagamack, which places the valuation at around $17,000,000, or about equal to what Canada Power and Paper received for Laurentide Power. If Canada Power absorbed Wayagamack, control of the Antioch Corporation would be secured, as at present Wayagamack owns one-third of the Corporation, the balance being owned by Port Alfred and Canada Power.

Brown Paper Mill Co. Offers Debentures

A new issue of $3,000,000 Brown Paper Mill Company 6 per cent convertible sinking fund debentures, due on July 1, 1939, was placed on the market Friday of last week at 97½ to yield 6.35 per cent. The offering group comprised the Continental Illinois Company, Inc.; Estabrook & Co., and the Whitney Trust and Savings Bank. The issue will be convertible at any time in the common stock and in the ratio of twenty shares for each $1,000 debenture.

Proceeds from this financing will be used to provide in part for the cost of additions to plants and equipment, which, when completed in the Summer of 1930, will give the company a daily capacity of about 350 tons of paper, compared with 150 tons at present. The company manufactures kraft paper and kraft paper board, and has shown an increase in earnings every year since its organization in 1924.

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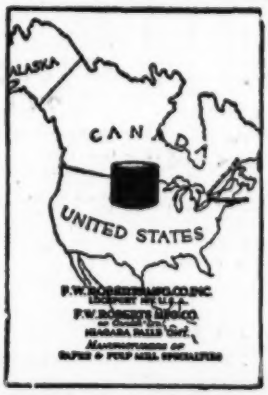

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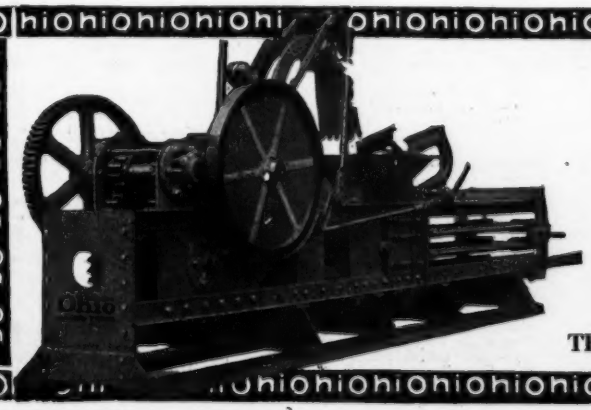

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, August 7, 1929.

BLANC FIXE.—Steadiness prevails in the blanc fixe market. Demand for both the pulp and the powder is fairly satisfactory. Prices are unchanged. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is still selling at from 3¼ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The bleaching powder market was moderately active during the past week. Contract shipments were well up to average for the season. Prices are generally holding to schedule. Bleaching powder is still selling at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Conditions in the casein market were irregular. Domestic casein is still quoted at from 14½ cents to 15½ cents per pound. Argentine standard ground is offered at from 15¼ cents to 15½ cents and finely ground at from 15½ cents to 15¾ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is in a sound position. Offerings are limited and prices are holding to schedule without difficulty. Solid caustic soda is quoted at from $2.90 to $2.95, while the flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—No radical changes were reported in the china clay market during the past week. The contract movement was about normal. Prices remain unaltered. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $15 per ton at mine.

CHLORINE.—Supplies of chlorine are going forward to the paper mills in excellent volume. Prices continue steady and unaltered. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—The rosin market was rather quiet and prices declined slightly. The grades of gum rosin used in the paper mills are now quoted at from $8.65 to $8.70 per 280 pounds, in barrels, on dock. Wood rosin is selling at from $6.75 to $7.80 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake are decidedly scarce and the market is exhibiting a strong undertone. Prices are holding to schedule without difficulty. Salt cake is quoted at from $17 to $21 per ton, while chrome salt cake is still selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Trading in the soda ash market during the past week was mostly along routine lines. Inquiries for future business are fairly numerous. Prices are being maintained at previously recorded levels. Contract quotations on soda ash, in car lots, at works, follows: in bags, $1.32½; in barrels, $1.55.

STARCH.—The starch market is practically unchanged. This product is in persistent demand and contract shipments are moving at an excellent pace for the season. Prices continue steady and unaltered. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99, in barrels.

SULPHATE OF ALUMINA.—Manufacturers of sulphate of alumina are experiencing a fairly satisfactory demand and shipments are going forward in a normal manner. Commercial grades are quoted at from $1.40 to $1.55, in bags, and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—Production of sulphur is being maintained in heavy volume. Prices remain unchanged. Sulphur is quoted at $18 per ton, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The talc market displays little change. Contract shipments are well up to average. Prices are holding to previously quoted levels. Domestic talc is selling at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is offered at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@53.25
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
Book, Cased—		
S. & S. C.	6.00	@ 7.50
M. F.	5.75	@ 7.00
Coated and Enamel	7.50	@12.00
Lithograph	7.50	@12.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.35	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .80
Kraft	1.00	@ 1.10
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.25	@ 4.50
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

News, per ton—		
Rolls, contract	62.00	@ —
Rolls, spot	62.00	@ —
Sheets	67.00	@ —
Side Runs	47.00	@52.00
Boards—per ton—		
News	37.50	@40.00
Straw	52.50	@55.00
Chip	35.00	@37.50
Binders' Boards	65.00	@70.00
Sgl. Mla. Ll. Chip	47.50	@50.00
Wood Pulp	80.00	@85.00
65 Test Jute Liner	52.50	@ —
85 Test Jute Liner	55.00	@ —

Mechanical Pulp

(On Dock)

No. 1 Imported—		
Moist	28.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.40
Easy Bleaching	2.90	@ 3.10
No. 1 strong unbleached	2.70	@ 3.00
Mitscherlich unbleached	2.80	@ 3.25
No. 2 strong unbleached	2.40	@ 2.50
No. 1 Kraft	2.40	@ 2.75
No. 2 Kraft	2.35	@ 2.50
Sulphate—		
Bleached	3.60	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.65	@ 3.00
News Sulphite	2.50	@ 2.70
Mitscherlich	3.00	@ 3.25
Kraft (Domestic)	2.50	@ 3.30
Soda Bleached	3.10	@ 3.25
Sulphate Screenings—		
Coarse	.75	@ .95
Refined	1.65	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.00	@11.50
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.50	@ 8.00
New Unbleached	11.00	@11.50
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Blue Overall	7.50	@ 8.00
Washables	4.75	@ 5.25
Fancy	5.75	@ 6.25
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.15	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soiled, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.90	@ 1.05

Foreign Rags

New Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cuttings	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50

Old Rags

No. 1 White Linens	7.50	@ 8.25
No. 2 White Linens	5.75	@ 6.75
No. 3 White Linens	4.75	@ 5.25
No. 4 White Linens	3.00	@ 3.50
No. 1 White Cotton	5.50	@ 6.50
No. 2 White Cotton	4.50	@ 5.50
No. 3 White Cotton	3.00	@ 4.00
No. 4 White Cotton	1.90	@ 2.15
Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	2.00	@ 2.10
Dutch Blue Cottons	2.25	@ 2.40
French Blue Linens	2.75	@ 2.85
German Blue Linens	2.35	@ 2.55
German Blue Cottons	2.15	@ 2.25
Checks and Blues	1.85	@ 2.00
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.60	@ 1.65
Old Shopperies	1.55	@ 1.60
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, Heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	4.60	@ 4.85
Domestic	5.00	@ 5.25
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.40	@ 2.55
Soft, White, No. 1	2.50	@ 2.60
White envelope cuttings	3.00	@ 3.50
Flat Stock—		
Stitchless	1.60	@ 1.70
Overissue Mag.	1.50	@ 1.60
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.00	@ 1.10
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.50	@ 1.75
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .80
Container	.57½	@ .60
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.90	@ 2.00
News—		
No. 1 White News	1.65	@ 1.75
Strictly Overissue	.75	@ .80
Strictly Folded	.57½	@ .62½
No. 1 Mixed Paper	.42½	@ .47½
Common Paper	.30	@ .35

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Cylinders—Ton Tanks—Tank Cars
76%—Solid Liquid Flake
Arnold, Hoffman & Co. Inc. Sole Agents
PROVIDENCE BOSTON NEW YORK
PHILADELPHIA CHARLOTTE

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¾	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¾	@	.06¾
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.20	@	2.25
White Env. Cuttings	2.40	@	2.50
No. 1 Soft Shavings	2.00	@	2.10
No. 1 Mixed	.90	@	1.00
No. 2 Mixed	.70	@	.75
Ledger & Writings	1.25	@	1.35
Solid Books	1.25	@	1.30
Blanks	1.40	@	1.50
Krafts	1.60	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.65	@	1.75
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.75	@	.80
Folded News (over-issue)	.80	@	.85
Old Newspapers—			
No. 1	.65	@	.70
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.60	@	.65
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.06	@	.40
Ledgers	.09	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.10	@	.20
Book, M. F.	.05½	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.09½	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.08	@	.09
Manila Sul., No. 1	.04	@	.05¾
Manila No. 2	.03	@	.04
No. 2 Kraft	.06	@	.06½
No. 1 Kraft	.06½	@	.07
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	75.00
News Board	35.00	@	40.00
Chip Board	32.00	@	40.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03½
Fancy	.05½	@	.06
New Black Soft	.05	@	.05¾
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.80	@	1.90
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.85	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.40	@	1.50
No. 2 Books, light	1.05	@	1.15
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.85	@	.90
Old Kraft	2.25	@	2.50
Common paper	.50	@	.55
No. 1 Mixed Paper	.60	@	.65
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.85
Old Newspaper	.50	@	.55

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
White, No. 2	2.00	@	2.25
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75
Repacked	.02½	@	.04¾
No. 2	1.30	@	1.35
No. 3 (Roofing)	1.15	@	1.25
No. 4	1.00	@	1.15
No. 5A	.75	@	.85
B	.65	@	.75
C	.65	@	.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04½	@	.06½
Manila, Sul. No. 2	.03½	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.04½	@	.05½
Common Bogus	.02	@	.02¼
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	50.00
Single White, Patent Coated Newsboard			
Bender	65.00	@	80.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.35
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.50	@	1.60
Old Kraft	1.75	@	1.80
Print Manila	.80	@	.90
No. 1 Mixed Paper	.40	@	.45
Overissue News	.65	@	.70
Old Newspapers	.50	@	.52½
Box Board, Chip	.55	@	.60

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.50	@	1.75
Manila Rope—			
Foreign	—	@	4.75
Domestic	—	@	5.00
Transmission Rope	2.00	@	2.25
Mixed Strings	1.25	@	—
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.00	@	1.10
Scrap Burlaps	1.37½	@	1.50
Scrap Sisal	1.87½	@	2.00
Scrap Sisal for shredding	1.85	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.90	@	2.00
Australian Wool Pouches	3.00	@	3.12½

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09½	@	.10
Silesias, No. 1	.06	@	.06¼
New Unbleached	.10	@	.10½
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04½
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.50	@	—
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	—	@	1.55
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.12½
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	—
Old Linsey Garments	1.85	@	1.90

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¼	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

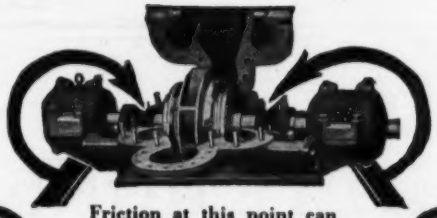
Ground Wood	30.00	@	31.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	—
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.10	@	.10¼
Fancy Shirt Cuttings	.03¼	@	—



Friction at this point can be very expensive.

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CUTNO PACKING

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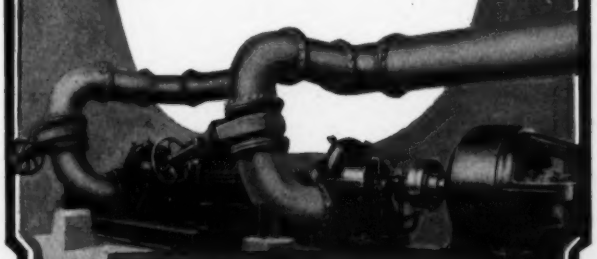

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